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Terminal Care

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"THERE is a new way of dying today. It is the slow passage via modern medicine: If you are very ill modern medicine can save you. If you are going to die it can prevent you from so doing for a very long time. We cannot inquire from the dead what they have felt about this deterrent. As they fight for spiritual release and are constantly dragged back by modern medicine to try again, does their agony augment?"

These words were written by a woman who watched her husband die slowly, and were published anonymously in the ATLANTIC MONTHLY of January, 1957, in an article entitled "A Way of Dying." The words, and indeed the article, expressed so vividly my own thoughts and convictions, that I decided to make it the theme of the surgical oration.

Much of medicine is scientific. We know about the sodium, the potassium, the calcium ion, and milliequivalents. The laboratory has removed most of the guesswork from problems of fluid balance and of pre-and postoperative care at a time when the conscious, basic personality of the human being is more or less in abeyance. On the other hand, we must not carry this line of reasoning to its ultimate conclusion, ignore the individual, and consider the medical or surgical problem only in the light of applied science. Since we deal with people and not mechanical devices, we must be practitioners of the *art* of medicine as well as of its science. There is no implication in the foregoing that either the art or the science is unimportant or should be ignored. The proper blending of both makes a wonderful physician who is beloved and sought by all.

Any intelligent mind within a few years can learn the facts presented by the scientific side of medicine. On the contrary, art is long and human understanding and humility are acquired only after a long time and sometimes not at all. Thus, the young physician tends to be impatient of restrictions imposed by considerations of personality and of the dignity of man, especially when the laboratory findings so clearly indicate a logical although divergent course of procedure.

As a department chief with many years of intimate dealing with successive generations of interns and residents, I may perhaps be permitted one or two generalizations. Chief among these is unwillingness of the young physician to acknowledge defeat in the war against disease. In medical school he received excellent training in the science of healing. Undoubtedly he witnessed surgical attack on each cavity and al-

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most every organ of the human body. He is aware of the dramatic possibilities of surgery but may not recognize its limitations. On the medical side he is aware of the conquest of diabetes, pneumonia, syphilis, and now poliomyelitis.

He projects to the future and argues that if a disease does not respond to known medicines, other drugs will soon be synthesized in the laboratory. Thousands of investigators in thousands of laboratories are diligently at work, pushing back the frontiers of knowlegde. Truly, we are in the golden age of medical miracles. Is it any wonder the young doctor believes that since the unknown, or the dangerous of yesterday, is understood or standard procedure of today, he may as well do something in a desperate or poorly identified situation, even though what he does may seem a bit esoteric? The young physician has been taught, and has come to believe in the invincibility of the healing powers of modern medicine and surgery. These teachings and beliefs do not encourage the development of humility, without which I believe no man can become a first rate physician.

Of course the young doctor knows that some diseases, like cancer, often result in fatality. On the other hand, emphasis in medical school undoubtedly was placed on the slogan, "Cancer is curable." Moreover, active teaching hospitals cannot devote many beds to chronic or terminal disease, thus automatically limiting opportunity to observe and practice terminal care. Unless he happened to spend a disproportionate amount of time in a tumor clinic with an excellent follow-up, death from malignant disease made little impression upon him. Therefore, he is incredulous and suffers some emotional stress the first time he meets the problem of inevitability of approaching death, in a young patient in apparently good health.

An unusually poignant illustration of this was occasioned by a 29 year old, attractive mother of three, and their sole support. She ignored the vaginal spotting beginning nearly five months before. At the time of admission she was in a good state of nutrition but had an inoperable far-advanced cancer of the cervix with massive extension to the right lateral pelvic wall. Statistically her chances of remaining alive for five years were less than 1 in 20. To look at this girl, so much needed by her family, and to realize that in all likelihood, she would not be here a few years from now, made even the most cynical of us want to do something to try to prevent the inevitable.

Therefore, it was not at all strange when the young staff doctors immediately raised the possibility of exenteration as a primary procedure. Most certainly, this operation would be done in such a case in many properly equipped institutions. I have performed it on occasion and believe it has a place among our present weapons against cancer. On the other hand, I believe it should be undertaken only after sober consideration of possible benefit, as opposed to immediate danger and the emotional adjustments involved. Furthermore, I have never performed this operation without putting the decision squarely in the hands of the patient after an unemotional and objective attempt to acquaint her with *all* of the facts and relative values pertinent to her situation. Whether removal of this young woman's rectum, urethra, vagina, urinary bladder, lower portion of the ureters, uterus, tubes and ovaries, and all of the pelvic cellular tissues and peritoneum would improve her chances of living was dubious. Because the cancer was firmly attached to the bony wall of the right side of the pelvis when she was first examined, I did not think so. Would the operation, even if it did not cure her, have brightened the closing days of her life? I did not believe so. Undoubtedly, there are many who would insist that we condemned this girl without a fair trial. This is scarcely a justifiable charge, since we did not abandon her but treated her vigorously with irradiation.

Personally, I believe in shooting the works when there is a fighting chance, and by so doing we do not increase the patient's misery and suffering. When there is no chance, I cannot condone doing something just to be going through the motions in order to kid ourselves and the patient's relatives that everything possible is being done. The physician who operates for this reason either does not possess or does not exercise human understanding and decent regard for the personality of the individual.

Prolongation of life, merely for the sake of a brief postponement of death, does not appeal to me. Sometimes it is difficult to know when

further treatment becomes useless. On the other hand, there are many times when we do know and can predict the outcome if either of two alternative courses is selected. Typical of this situation is ureteral obstruction in terminal carcinoma of the cervix. Uremia is a common cause of death with cervical carcinoma. Moreover, it represents a gradual fading and dimming of consciousness, and to me would seem to be an easy and painless way to die. Nevertheless, there are those who would perform cutaneous ureterostomy or pyelostomy on such patients. This might prolong life by six months and certainly would restore the patient to consciousness and awareness of her surroundings. But, what does she pay for these six months? At least the terminal two or three weeks will be associated with great pain and any or all of the disagreeable symptoms of late cervical cancer. I would not wish this for a loved one if the alternative were a relatively easy and painless death hastened perhaps a few months.

Sometimes the young physician wishes to prolong life because he can see no other way out of a seemingly impossible situation. Typical of this was a postmenopausal woman with carcinoma of the corporeal endometrium. At the time of operation the carcinoma had already broken through the uterus and produced a generalized abdominal carcinomatosis. There were many parietal and visceral implants and a great many adhesions between loops of bowel. Nothing was done except biopsy, the abdomen was closed, and she went home in due course of time. Months later the inevitable occurred and she returned with mild symptoms of obstruction. A tube was inserted, the patient became comfortable, but proper management of fluid and electrolyte balances became an increasingly difficult problem. Despite the fact that separation of loops of intestine from each other would have been technically difficult at the first operation and that the patient was virtually moribund, the residents almost unanimously demanded some type of intestional operative procedure. I refused, but said if they could persuade someone else to operate on her, they could do so. They did, but the patient died before the operation was done. It was demonstrated at autopsy that bowel operation would not have been technically feasible. Considering the situation at the first operation, this could have been foreseen and I am certain the residents knew it. They were, however, motivated to do something because philosophically they could not bring themselves to accept an impasse—namely, the patient could neither live with the tube nor without it.

Another example of refusal to accept the inevitable appeared among some detailed case reports recently available for study. The patient, 36 years old, was found to have a large malignant multilocular cyst so adherent to the parietes it was difficult to deliver from the abdomen, and was ruptured in doing so. There was extensive infiltration of the pelvis, particularly on the left side and about the ureter. As much tumor as possible was removed and total hysterectomy and bilateral salpingo—oophorectomy performed. There also were implants in the omentum, which was removed in its entirety. Then the patient received a full course of X-ray therapy. Six months later a cystic mass developed in the epigastrium. Localized paracentesis was performed several times with removal of one to two liters of fluid each time. Soon, she developed pleural metastases and was given localized, palliative X-ray. Nitrogen mustard was instilled into the right pleural cavity. Ten months later she developed symptoms of lower bowel obstruction and pulmonary metastases and a resection of the terminal ileum and cecum and an ileocolostomy were done. She went steadily downhill and died three months later, 19 months after the first operation.

Since the doctor was a specialist, we must assume he knew the patient was hopelessly incurable at the time of the initial operation because of the pelvic and ureteral infiltration, the adherence of the mass to the parietes, and the omental metastases. Nevertheless he performed an unnecessarily extensive operation and then made the poor woman's 19 months of remaining life miserable with traumatic and debilitating procedures. Perhaps he prolonged her life although I doubt it. If he did, whatever time he borrowed for her was not a comfortable time. Personally, I would feel his efforts would have been more profitably directed at making the closing months emotionally satisfying and at the relief of pain when it developed.

As I read the history of this poor woman,

my mind reverted to the wife referred to in the opening paragraph. Her husband was operated on, did not do well, developed some complication necessitating re-operation, became comatose, and then slowly expired. After too many weary hours of death vigil at the hospital during which many unnecessary efforts were made to keep her husband alive she was told "he's rallied." Her reply was, "How horrible." A few hours later he died. I too, feel, "How horrible," especially for the relatives, at the futile and unnecessary gestures so frequently made to prolong life.

On the facade of the Union Station in Washington, D. C. is carved in granite, the admonition, "Speed the parting quest." I do not quote this as a plea for euthanasia. It is a plea to the physician to refrain from unnecessary heroics. When confronted with a rational and sentient patient, about to embark upon the final phase of his terminal illness, the physician should ask himself the question, "If I were the patient, what would I want done to me?"

When the situation develops to the point where further efforts at maintenance of life become futile gestures, it would seem that the principal duties of the physician are to insure good nursing care and alleviate pain. Sometimes, death is a long time coming. Then I think the physician has another duty—namely, to help the patient and the relatives understand and cope with the situation. Some years ago, Montefiore Hospital in New York City instituted a program of discharging chronic, and terminal patients from the hospital, but providing excellent medical and nursing care at home. All of the facilities of the hospital were invoked whenever necessary.

Soon, it developed that much more than medical and nursing problems were involved. Chiefly, these problems centered around two important necessities: First, the patient had to be loved and wanted in the home. Second, the patient had to be given something useful to do, no matter how insignificant it was. The necessity of making him feel he was contributing something to the family life was integral to his emotional adjustment and to his successful care. Unless he was wanted, and felt he was helping in some way, the plan was defeated by the rising emotional tensions.

Both the minister and the doctor can help to make terminal care in the home successful. Since the doctor is the only one familiar with the minutiae of handling such situations and competent to advise on how much the patient can do, this duty therefore lies with him. Not only must the physician keep up his regular visits but he must also encourage the family to spend time with the patient.

In the July, 1956, issue of the British journal, *MEDICAL WORLD,* Dr. T. N. Rudd in an article entitled "The Family Doctor at the Death Bed" says, "However little we may be able to do, we cannot be relieved of our duty to visit. The importance of regular visits cannot be overstressed. It is not easy to visit helpless patients who have insight into the gravity of the illness but it is a fundamental routine which the physician should not omit on the grounds that he can do no more and that the nurses have the treatment well in hand."

I would like to quote at some length from "Medico-Moral Problems" by Gerald Kelly, S. J., concerning ordinary and extraordinary means of preserving life. "Ordinary means of preserving life are all medicines, treatments, and operations, which offer a reasonable hope of benefit for the patient and which can be obtained and used without excessive expense, pain, or other inconvenience. Extraordinary means of preserving life include all medicines, treatments, and operations, which cannot be obtained or used without excessive expense, pain, or other inconvenience or which, if used, would not offer a reasonable hope of benefit." Obviously the physician should employ ordinary means of preserving life. He is not obligated to employ extraordinary means. Quoting again from the same reference. "It is not contrary to the common good for a doctor to admit that a patient is incurable and to cease trying to effect a cure."

These philosophic matters are becoming of increasing concern to the public as evidenced by the number of articles appearing in various lay magazines. One of the most moving appeared in *LOOK* for March 19, 1957, and was condensed from the book "Death of a Man" by Lael Tucker Wertenbaker. Her husband, about whom the book is written, himself wrote, "Ever since I can remember, it had seemed to

me that to be deceived about the nature or progress of a serious illness or even to suspect deceit would go far toward destroying whatever fortitude one could summon to face one's trials." Mrs. Wertenbaker continued this thought, "It was a principal with him, a moral and principled man, that he had a right to die as he wished to, when he chose, if possible." The husband also wrote, "The problem with death is to recognize the point at which you can die with all your faculties and take a healthy look at the world and the people as you go out. Let them get you in bed, drug you, or cut you and you become sick and afraid. If you wait too long, you may be reduced to something less than a man."

The problem of terminal care inevitably is inseparably intertwined with the problem of what to tell the patient. After Wertenbaker underwent exploratory celiotomy and liver metastases were found, the following verbal interchange occurred,

"M.D. Now, what shall we tell Wert?

"Wife. Tell him the truth.

"M.D. You can't. You can't take hope away from a human being.

"Wife. Is there any hope?

"M.D. No.

"Wife. I cannot lie to this man. That would take his dignity away from him. He would rather have dignity than hope."

Referring again to the British journal, *MEDICAL WORLD,* Dr. Rudd says, "Too often relatives and doctors increase their own difficulties by maintaining a conspiracy of silence regarding the hopeless prognosis and the nearness of the end. Here, every situation must be judged on its merits. Generally speaking, the patient is more willing to be told than are the relatives that he should know. If, in answer to direct questions, lies are repeatedly told, the patient will either be denied knowledge of his condition which he has a right to know, or he will draw his own conclusions, and lose confidence in his attendants in the process. Undoubtedly, in almost every case, management becomes greatly simplified once the patient knows the truth and faces it. Occasionally, the dying patient grows so enormously in mental stature that he dominates the situation, and gives out strength rather than having to receive it."

Gain in emotional stature by a patient faced with death is wonderfully exemplified by a recent article in the July, 1956, issue of *FARM JOURNAL AND COUNTRY GENTLEMAN,* titled, "My Last Wonderful Days." It was written by the wife of a Dean at Iowa State College. "In a few weeks—or maybe a few days —I shall die. I shall leave my husband, my two teen-age girls, and my blue-eyed Richard, who is only 12. Every relentless tick of the clock measures off what remains of my life. Yet I am a happy woman!" She not only was able to face death with equanimity, but also found the strength to be able to prepare her entire family emotionally for her coming departure. She said, "I am determined to keep these last weeks as normal as possible for my family. Why, when I have spent years creating a happy home for them, should I give up now during these last weeks when they need the assurance of normalcy more than at any other time in their whole lives?"

This is only one of a number of articles appearing recently in the lay press. Once again, I should like to comment that these philosophical matters are of considerable concern to the public and we, their physicians, should exhibit a proper understanding of their importance.

In closing, I cannot refrain from quoting excerpts from an editorial entitled "Pen-knife Surgery" appearing in the March, 1957, issue of the *ILLINOIS MEDICAL JOURNAL,* despite the fact that many of you undoubtedly read it. The editorial comments on a recent medical article. It seems the victim (a physician) collapsed on the steps of the hospital and was rushed to the emergency room. No heart sounds were heard. His chest was opened between the fourth and fifth ribs and his heart massaged. Ultimately he made an uneventful recovery. The author of the article believes this is the first reported case performed outside the operating room and suggests that lay teams be trained to take over when a patient dies from an acute heart attack. He thinks a two day course should suffice to acquaint them with technics. Reports of cardiac massage outside the operating room have appeared since the one mentioned above. A western surgeon attending a party collapsed

in the living room of his host. Two internists present opened the doctor's chest with a pen knife, after they were unable to hear heart sounds, and massaged his heart. The surgeon was revived only to succumb two days later of a second occlusion.

Doctor Hiram T. Langston a thoracic surgeon, recognizes the emergency when it occurs in the operating room, but is leery about training nonmedical personnel to wield a pen-knife. He says, "I cringe, in fact, at the appalling prospects of lay people (firemen, policemen, or golf caddies) equipped with do-it-yourself kits for cardiac arrest being willing to 'save the life' of any who may fall by the wayside. These tired and fainting people just might not be dead." If I be the one to fall and am seemingly dead, please stretch me out, loosen my clothing, and fan me. Should I be truly dead, 'tis just as well. But should I not be dead, my recovery will not have been hindered. I for one am quite convinced that should I be otherwise qualified, those Pearly Gates will swing out to admit me just as easily without a hastily done incision into my chest as with one."

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Medicine and management

I have been amazed at discovering that in many organizations with well supported medical departments, communication between the doctors and the personnel officers is almost entirely written and often is little more than the forwarding of check lists. The information which the personnel worker needs is subtle and full of delicate shadings and can be imparted only through face to face give and take in which many questions are asked on both sides in order to clear up overlooked misunderstandings. This takes time and many industrial physicians feel that this is a very scare commodity. I firmly believe, however, that if the only way to obtain enough time for developing easy understanding between the two departments is to lengthen the time between periodic health examinations, such an arrangement would better serve the interests both of the employees and of the firm. In those organizations I have visited in which there was easy informal access between the members of the two departments, necessary information appeared to flow readily and the medical department seemed to be increasingly in a position to make its rightful contribution to policy decisions. Where communication was almost entirely written, either the medical department was in but not of the organization or the doctors were complaining that the personnel department was putting pressure on them to violate ethical principles, and the personnel people were complaining that the doctors were obstinately and unreasonably standing on the letter of the law. *Temple Burling, M.D. Medical Ethics Versus Needs of Personnel Officers. Indust. Med. June* 1957.

Oliguria and Anuria

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Anuria usually appears after a period of oliguria which has existed for a few hours or several days. Except for patients who are already undergoing hospitalization, or who have had surgical procedure, the majority of these patients are seen by the general practitioner of medicine, or by those limiting their activity to internal medicine. If the renal function reactivates, as it often does on expectant treatment, everyone is happy and the incident is dismissed as one of minor importance. It should be emphasized that it is a common experience to find a diagnosis of "anuria" being made when, actually the patient's bladder is filled with urine; the kidneys are functioning but the patient has no discomfort and no desire to void. Naturally, the real condition is made clear by catheterization of the bladder and may often be obvious where physical examination outlines the overdistended bladder.

Except in patients where anuria develops during the course of urologic investigation or treatment, the urologist may not be called in consultation for several days after the lack of urinary excretion is appreciated by the attending physician. Anuria, when it arises, may become the problem of the medical man or the surgeon, but eventually should include the urologist as well.

To the inexperienced, the occurrence of oliguria and anuria in an otherwise apparently healthy subject may seem baffling and confusing. This should rarely be so if one takes into account our present knowledge of the subject. Classification of the causes of anuria resolves itself into three principle groups:—prerenal, renal, and postrenal. The latter may include so-called reflex anuria. The anuria of the newborn—the arenal type—needs no discussion. So-called reflex renorenal type of anuria is largely applicable to the cessation of function of both kidneys when only one of the ureters is obstructed.

Let us emphasize that in true anuria there is no urine in the bladder.

PRERENAL CAUSES

Factors operating upon renal function before the blood reaches the kidney include abnormally lowered blood pressure, thrombosis of the renal vessels, hepatic disease, neurogenic reflex as after cystoscopy or other instrumentation, thyroid deficiency, dehydration by vomiting with urinary sepsis, diarrhea, shock, or excessive perspiration. Fear, in my experience, has caused prerenal anuria without evidence of shock on a number of occasions.

The presence of vascular collapse associated with sudden bacteremia is becoming of much more frequent occurrence in postoperative care. This may be due to the indiscriminate and often prolonged use of antibiotics. The condition may not be detected because the usual manifestations of shock are absent or obscured by a warm skin, a bounding, rapid pulse, and fever. Only the detection of markedly lowered blood pressure—severe hypotension—may alert one to a situation that is often fatal if uncorrected. We have seen this condition on a number of occasions in the past few years where the clinical picture immediately suggested a pulmonary embolism, a sudden coronary thrombosis with myocardial infarction, or some other type of vascular collapse.

Oliguria, anuria, and azotemia result in these patients because of renal insufficiency. Unfortunately, a large majority of these patients will die regardless of treatment. In any patient with fever, and a disease of or recent operation on the urinary or gastrointestinal tracts, one should constantly be on the lookout for the possible presence of bacteremia due to gram-negative organisms. Patients who develop watery stools and severe diarrhea naturally call attention to the possibility of the pseudomembranous en-

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terocolitis which usually is found with this condition. It has been our experience that a number of these patients have gone into vascular collapse with dyspnea and pulmonary findings who had little or no presenting evidence of a pseudomembranous enterocolitis. About 10 per cent have diabetes mellitus and it is well to consider this when vascular collapse follows a urological or an abdominal procedure associated with anuria.

RENAL CAUSES

These are directly operative upon the kidney itself and include degenerative and inflammatory diseases that are bilateral in nature. Poisoning, such as bismuth, bichloride of mercury, or carbon tetrachloride; shock; extreme suppuration, usually associated with bacteremia; reflex mechanisms, as previously stated; and severe allergic reactions of an overwhelming histamine type. Renal anuria for a time was largely caused by blockage of the renal tubules by sulfanilamide crystals, although at present, we rarely see this complication due to improvement in the acetylization of this drug. We now see renal anuria most commonly due to hemoglobin crystals in transfusion reactions or by myoglobin and hemoglobin substances in the renal tubules associated with the crush syndrome or extensive burns. These conditions may be associated with marked tubular degeneration in the kidney and often are spoken of as "lower nephron nephrosis syndrome."

POSTRENAL CAUSES

Postrenal causes of oliguria and anuria usually are those which interfere with the drainage of the urine from both kidneys or in the only kidney, when it is solitary. The most common cause of anuria is bilateral renal or ureteral calculi. This may be especially misleading in patients with nonopaque urate calculi or in individuals who form calcium carbonate stones on prolonged alkaline therapy. Each year we see a certain number of individuals who develop oliguria and often complete anuria from bilateral ureteral pressure due to tumor metastases in the retroperitoneal spaces. The most common of these occur in carcinoma of the cervix or body of the uterus. We have observed this condition in several instances where drop metastases occurred from clear celled carcinoma of the kidney. Bilateral ureteral injury or ligation following pelvic or abdominal surgery must be considered a form of postrenal anuria.

It may seem academic to emphasize again the fact that the diagnosis of anuria is made only when no urine is entering the bladder. I have been called in consultation on a number of instances where the patient's bladder was filled with urine and he was being treated for anuria. Either no attempt was made to catheterize the bladder because the patient had no desire to void or the catheterization had been unsuccessful, the catheter never entering the bladder, giving rise to the decision that there was no urine in the bladder because none had been obtained by the unsuccessful procedure.

The treatment of anuria, therefore, demands, first, prompt catheterization of the bladder; secondly, if no urine is present in the bladder, ureteral catheterization must be done immediately to identify or to relieve the obstructing factors if they are present. If both catheters pass readily to each renal pelvis and no urine is obtained from either, renal function has ceased and the diagnosis is definitely established. Ureteral catheterization is, in essence, both a diagnostic and a therapeutic procedure. In the case of prerenal anuria, it is certainly permissible to combat the lowered blood pressure, shock, or other complications by circulatory replacement of whole blood, plasma, or isotonic glucose-saline solution. The selection of intravenous fluid will depend upon the condition of the patient and whether there has been previous vomiting, urinary sepsis, diarrhea, or excessive perspiration. If anuria persists, it is not reasonable to continue this treatment alone longer than 48 hours without subjecting the patient to ureteral catheterization.

It is our habit in patients with anuria to maintain fluid balance, i. e. have the fluid intake equal the estimated fluid loss by skin, lungs, bowel, or vomiting. For an average adult, this will be from 1,000 to 1,200 cc. per day. More than this may throw an unnecessary strain upon the patient, leading to pulmonary edema and anasarca. The place for a patient in whom the diagnosis of anuria has been definitely established is the hospital where complete laboratory studies can be utilized from day to day in the application of treatment. For instance, prolonged vomiting, hyperventilation, or excessive

ingestion of alkali may bring about a condition of alkalosis characterized by a rise in the CO_2 combining power of the blood. As a result of this condition, the patient may be apathetic and exhibit signs of tetany. On the other hand, prolonged diarrhea, impaired ability of the kidneys to form ammonia, excessive ingestion of acid with impaired renal function may cause acidosis which will be characterized by a lowered CO_2 combining power. Hyperpnea may be present if acidosis becomes severe.

It should be especially noted that depletion of water alone is not commonly seen in the patient except in conjunction with depletion of salt. Prolonged vomiting, nasal suction, diarrhea, and excessive sweating usually are forerunners of this condition. Severe diuresis following oliguria or anuria or adrenal insufficiency may cause salt depletion. In a patient with salt depletion, one must not try to correct the patient's dehydration by the oral administration of water or the intravenous administration of glucose. As a result of dilution by ingested water and loss of salt, the extracellular fluid becomes hypotonic and water is excreted to maintain isotonicity. Hemoconcentration occurs and leads to increased vicosity and reduced volume of the blood. Hypotension ensues and may be followed by circulatory collapse. These patients complain of lassitude, headache and dizziness but are not thirsty, as a rule. Anorexia, stupor, and shock result.

Laboratory findings show reduced urine chlorides, low chloride and sodium findings in the plasma, azotemia, and a high hematocrit reading. Atony of the stomach, spasm of the pylorus, and acute gastric dilatation may result. It should be especially emphasized that one should never give any great amount of saline intravenously to a patient unless it is definitely needed, because it is easy to kill the uremic or oliguric patient with it. The decision as to what type of fluid to give, in a case of anuria will lie between the intelligent use of intravenous physiologic saline, 5 per cent glucose, or one-sixth molar sodium R-lactate solution, depending upon the individual case. The patient must lose water equal to about 5 per cent of his body weight before dehydration is clinically evident. Edema is not usually apparent until fluid equal to 10 per cent of the body weight is retained.

In watching a patient who is anuric, especially before or after surgical procedures, the daily weight is important. We feel that a daily weight gain which exceeds two per cent in a patient who is otherwise well hydrated but who is not eating well means retention of water and salt, and both water and salt should be stopped until the cause of weight gain is found. An overall maxim with us is that mild dehydration is always to be preferred to overhydration, since it is much less dangerous systemically. This rule certainly applies to all oliguric or anuric patients. In the anuric patient who has had a transfusion reaction or where we are dealing with a case of the crush syndrome and hemoglobinuric anuria, or hemoglobinuric anuria due to severe burn, where the laboratory tests so indicated, we have employed 2.5 per cent sodium sulfate intravenously, given very slowly and in the dosage of 15 cc. per kilogram of body weight. This treatment should never be given unless the upper urinary tract drainage is unimpeded.

If uretheral catheterization is inadequate to establish free renal drainage in cases of anuria, individual instances may demand the use of nephrostomy, ureterostomy, or other surgical procedures. It seems trite to say that the final surgical indications are those relative to definitive surgery to correct obstructive factors which is not performed until it is quite definite that the acute crisis is past and the condition of the patient warrants the procedure. We have recently observed several cases of oliguria and anuria of four to five days' duration which have recovered on conservative treatment and where the only etiological factor seemed to be exposure to carbon tetrachloride. During the same interval, we have had instances of bilateral calculi and bilateral ureteral obstruction due to the causes already mentioned. In metallic renal poisoning, we have not found renal decapsulation to be of particular value, although a few patients have recovered following this procedure. We cannot decide in these instances as to whether these patients might have opened up from a renal function point of view without the decapsulation. Sweating in these patients, as a rule, is contraindicated; it only weakens the patient and does nothing toward curing the fundamental condition.

The transfusion of whole blood is an important and lifesaving procedure but it has become the most carelessly abused procedure in medical and surgical care. The one possible exception to this statement is the ill-advised use of the antibiotics. Naturally, the blood of every patient who is to undergo a urological or surgical procedure should be carefully typed and cross-matched and the proper amount of suitable whole blood should be available if needed. This situation poses no problem in the large metropolitan hospital with its own generous blood bank, but in the smaller outlying hospital such anticipatory provisions may not be on hand. The more common complications of blood transfusion are renal and hepatic damage, leading to oliguria and anuria, so-called lower nephron nephrosis, and hepatitis.

I often wonder if the attending physician realizes that every time he gives whole blood to a patient there is a risk that the above complications—one or both—may develop. Does he know that the mortality from blood transfusions approximates that of surgery for appendicitis in the average metropolitan center? If he does know this, surely he will not be guilty of giving blood for its so-called tonic effect when the blood count is normal, or of giving blood in anticipation of possible blood loss during a surgical procedure which may be expected to be accompanied by only minimal bleeding. Neither will he give blood as insurance to the maintenance of blood pressure when there has been no appreciable blood loss during the surgical procedure. It may seem redundant to state that needed blood transfusion is one of our greatest aids in the care of the surgical patient but needless blood transfusion certainly is to to be avoided and condemned.

In recent years, attempts have been made to extract the toxic metabolities in the circulation in desperate cases of anuria. The methods that have been employed are gastrointestinal lavage, peritoneal irrigation, or the use of the artifical kidney, when available. The artifical kidney can selectively remove metabolites and electrolytes from the body in from four to eight hours. Correction of the acid base balance will be necessary in most instances in accompanying this procedure. When obstruction to the outflow of urine has been eliminated, ordinarily renal function may be expected to resume not later than six to nine days, and if life can be preserved this long, most kidneys will revive and resume function. For this reason, an artifical kidney should be available in most centers to care for this occasional patient. Careful electrolytic studies must be made so that therapy may be properly applied. It is obvious that these artificial kidney centers need to be rather few but that their facilities be available to surrounding communities. For these reasons, all doctors should co-operate with the existing artificial kidney units to apply this modality to patients who have a chance for reversal of the anuric state.

In urology, one of the more common causes of oliguria and anuria which has been recognized in recent years, is that of hemolysis accompanying various transurethral procedures. During the course of transurethral resection of the prostate gland, the venous plexus which surrounds the capsule of the gland is often cut into and offers a ready avenue for the introduction of irrigating fluid into the vascular system. Experiments have shown that as much as 1,000 to 1,500 cc. of fluid may be forced into the vascular system during a prostatic resection. It is established that the use of sterile distilled water for irrigating purposes may cause hemolysis, either within the bladder or the venous system, and as a result, renal changes of a toxic and obstructive nature may bring about oliguria, anuria, and in rare instances even death. For this reason, we use 1.1 per cent glycine solution in all transurethral procedures. Four per cent glucose solution and other isotonic fluids have been used by others.

CONCLUSIONS

Anuria is a state which may arise from a number of sources. We must distinguish the etiology as to whether it is prerenal, renal, postrenal, or reflex. We might also consider the classification from the treatment point of view as being medical, urological, and surgical. In every form of anuria, each of these methods can and must be used, depending upon the condition of the individual patient. Intelligent treatment rests upon co-operation between physician, urologist, surgeon, and laboratory technician. Fewer patients would succumb to anuria if an intelligent regimem and regard for the condition is undertaken.

Soluble Hydrocortisone and Prednisolone in Ophthalmology

Warren W. Kreft, M.D., Des Plaines

In the past decade, ophthalmology has made great strides in therapeutics. Occupying a prominent position in this advance are the various steroid preparations beginning with cortisone and more recently, prednisolone.

Past experience has shown that these suspensions were not ideal in that they had to be shaken before use. In some cases after 48 hours usage, the drops burned so severely that they had to be discontinued. In most instances this was due to admitted insufficient agitation of the suspension before use. There have been complaints of a granular foreign body sensation with their instillation and patients also have noted the collection of white material at the inner canthus. The white suspensions are easily identifiable and thus may lead to unsupervised use when they may be contraindicated. The purpose of this paper is to show that these new solutions, soon available, are effective in conditions which have been shown to be amenable to steroid therapy.

Numerous papers have already appeared on the chemistry, indications, and contraindications of these steroids.[1-8] Suffice it to say that hydrocortisone and prednisolone are synthetic preparations which differ from cortisone by the possession of a hydroxyl group in the 11 position, rather than a carbonyl group. Prednisolone differs from hydrocortisone by the possession of an additional double bond in the ring conjugated to the ketone.

Systemically prednisolone has been found to exert an anti-inflammatory action up to five times[4-6] that of hydrocortisone, with a marked decrease in side effects and toxic reactions. Several investigators have found that prednisolone is more effective than hydrocortisone topically[5,8].

However, this is difficult to evaluate precisely. The only possible manner in which it could be demonstrated would be to treat a bilateral case with two different preparations. The difficulty of such an undertaking is self-evident.

Little difference can be detected between the effectiveness of ointments and of solutions. Ointments, however, are more difficult for the patients to administer and are less likely therefore, to be effective.[1] Drops, can be administered easily by the patient with a minimum of effort, discomfort, and disability. The consensus of laboratory and clinical experience indicates that treatment of anterior segment disease usually requires only local application.[9] Moreover with the introduction of prednisolone and its low side effects and toxicity on oral administration, it is felt that subconjunctival injection of steroids will be eliminated.

The two solutions used in this series consist of hydrocortisone (Optef*) and prednisolone .2% in the alcohol form. These solutions are colorless, sterile, buffered, and iso-tonic. They have a pH of 6.5 and a surface tension of 40 dynes/squares centimeters. One-half per cent chlorbutanol has been added as a preservative and sterilizing agent. These solutions are stable at room temperatures for periods of six months or more.

I have used the diluent solution on 50 patients with no subjective complaints of stinging or irritation. Over 150 patients have been treated with these preparations with only occasional complaints of mild stinging. In no case have the drops been discontinued due to discomfort. The patients in this series used the drops, initially, every hour during the daytime and the treatment varied from one week up to

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Presented before the Chicago Ophthalmological Society, March 18, 1957.

*Solutions of hydrocortisone (Optef), and prednisolone for this study were supplied by the Department of Clinical Investigation, The Upjohn Company, Kalamazoo, Michigan.

eight months. A good result is classified as one in which there was relief of symptoms in 24 hours, and no symptoms in 7 days.

RESULTS OBTAINED WITH SOLUBLE HYDROCORTISONE AND PREDNISOLONE

	Hydrocortisone		Prednisolone	
	GOOD	POOR	GOOD	POOR
Allergic Conjunctivitis	31	3	34	2
Allergic Dermato-conjunctivitis	12	2	14	1
Vernal Conjunctivitis	4	1	3	1
Pingueculitis	3	0	4	0
Phlyctenular K. Conjunctivitis	3	0	2	0
Diffuse Episclertis	4	1	3	1
Traumatic and Post-operative Iritis	5	0	7	0
Nongranulomatous Iritis	2	0	3	0

The above table consists of eight of the most common conditions which respond to steroid therapy. Other conditions as herpes zoster, marginal ulcer, superficial punctate keratitis, and recurrent corneal erosions, also responded well to these solutions. However, they were in insufficient quantities to be significant.

Allergic conjunctivitis and dermatoconjunctivitis responded well to either solution. One case of allergic conjunctivitis which did not respond to hydrocortisone cleared with the prednisolone solution. As these cases are prone to recur, patients were given the solutions to use whenever this occurred. It was felt that the effectivity of the solutions was almost equal.

Vernal conjunctivitis, symptomatically responds very well but, as Hogan[1] found, relapse was invariable necessitating periodic therapy. Both solutions reduced the hyperemia and discharge but the papillae persisted. It was also noted that unless therapy was continuous the papillae seemed to increase in size. One case which did not respond to prednisolone was relieved with hydrocortisone.

Pingueculitis and phlyctenular keratoconjunctivitis responded to either solution equally well.

Diffuse episcleritis responded to either solution slowly. In some cases 3-4 weeks of therapy was required. One case cleared with the prednisolone solution, recurred later, and cleared with the hydrocortisone solution.

Traumatic and postoperative iritis seemed to clear rapidly with either of the two solutions. Topical atropine and hot wet packs also were used in these cases.

Nongranulomatous iritis cleared well with either solution in conjunction with atropine drops and hot wet packs. The recovery time was variable and in some cases, took 4-6 weeks for recovery.

The solutions also were used on cases which are known not to respond to steroid therapy including granulomatous iridocyclitis, chronic follicular conjunctivitis, seborrheic and staphylococcic blepharoconjunctivitis, Reiter's disease, and nodular episcleritis. In none of these was a good effect obtained. There were no cases of dendritic ulcer following use of either solution. However, it could very well occur with their indiscriminate use. I am unable to detect a clear-cut difference in the effectivity of these solutions. This may be due to the fact that as solutions they provide uniform and higher effective concentration of available steroid. Perhaps with time we may be able to more closely differentiate their individual indications.

SUMMARY

Soluble hydrocortisone and prednisolone have been found to be an excellent addition to the clinician's armamentarium in the therapy of conditions amenable to steroid therapy.

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The Renal Control of Acid-Base Balance

MALCOLM MILNE, M.D., DIRECTOR, RENAL UNIT, HAMMERSMITH HOSPITAL, LONDON

Doctor Norman B. Roberg, Associate Professor of Medicine: It is my very great pleasure to introduce Doctor Malcolm Milne, Director of the Renal Unit, Hammersmith Hospital, London. He will present to us today some of the newer aspects of renal physiology in regard to the control of acid-base balance.

Doctor Milne: Thank you, Doctor Roberg. I would like to present today material that is recorded in the recent literature regarding the role of the kidney in the control of acid-base balance. Since the maintenance of normal body pH is such as closely guarded constant, and since deviations from normal produce such marked symptoms, the topic is of obvious importance. Homeostasis of pH in the body is normally achieved via three mechanisms:

(1) The physio-chemical effects of the buffer systems in the body fluids both extra—and intracellular.

(2) The effects produced by variation in respiratory ventilation in the lungs, and

(3) The effects produced on the electrolyte composition and urine formation by the kidney.

In the third mechanism, the chief load presented to the kidney for biological work is the elimination from the body of excess non-volatile anions. Their presence in urine is the chief cause of its usual acidity. They consist chiefly inorganic phosphate (resulting from phospholipid, nucleic acid, and protein degradation) and inorganic sulphate (from mucopolysaccharide and cysteine degradation) and are presented to the kidney to the extent of 60 meq. per day in normal states. This amount is well within the excretory capacity of the normal kidney, but frequently above the capacity of the kidney in disease. The glomerular filtrate formed directly from the profusing plasma has a normal pH of 7.4 and a normal bicarbonate content of 27. meq. per liter. Bladder urine normally is acidic (pH down to 4.4) with little or no bicarbonate content. Obviously during the passage of the glomerular filtrate through the renal tubule, bicarbonate has been removed and acidity enhanced. The mechanism for this action is as follows: (1) the renal tubular cells of both the distal and proximal convoluted tubules produce H^+ and HCO^-_3 via carbonic acid from CO_2 and H_2O catalyzed by the enzyme carbonic anhydrase; (2) the H^+ so formed is exchanged for Na^+ of the glomerular filtrate resulting in reabsorption of Na^+ and acidification of the glomerular filtrate; (3) the H_2CO_3 formed from HCO^-_3 by the acidification of the glomerular filtrate decomposes to CO_2 and H_2O. The CO_2 being freely diffusable is largely reabsorbed, (4) the renal tubule cells in addition utilize H^+ produced by the carbonic anhydrase reaction for the synthesis of NH_4^+ from NH_3, the latter chiefly formed from blood glutamine by means of the enzyme glutaminase. The NH_4^+ so formed is in turn exchanged for Na^+ in the tubular lumen. As a consequence of these mechanisms, the acidity and HCO_3 content of the urine are directly determined by the intracellular acidity of the renal tubular cell.

Let us examine the operation of these mecha-

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RENAL FUNCTION IN DISEASE STATES

	Serum HCO_3^-	H^+ Exchange	Urine pH
1. $NaHCO_3$ loading	↑	N	Alkaline
2. NH_4Cl loading	↓	N	Acidic
3. Hyperventilation	↓	↓	Alkaline
4. Respiratory acidosis	↑	↑	Acidic
5. KCl loading	↓	↓	Alkaline
6. KCl depletion	↑	↑	Acidic
7. Acetazolamide therapy	↓	↓	Alkaline
8. Na_2SO_4 loading in the normal	N	N	Weakly Acidic
9. Na_2SO_4 loading during increased sodium reabsorption	N	↑	Strongly Acidic

nisms in various disease states with the aid of the prepared table. First let us examine the effects of loading the body with $NaHCO_3$, a basic salt. This raises the serum HCO_3 load presented to the renal tubular cells by the glomerular filtrate. The tubular exchange of H^+ for Na^+ is normal or slightly reduced with the result that the glomerular filtrate is not acidified. Its HCO_3 content is maintained and the urine remains alkaline.

Loading the body with NH_4Cl, an acid salt results in a decrease of serum HCO_3 content and reduction in the load of HCO_3 presented to the renal tubular cell by the glomerular filtrate. The interior of the tubular cell is more acid, and, therefore, an increased tubular Na^+H^+ exchange occurs with the glomerular filtrate. Filtrate HCO_3 is converted to freely diffusable CO_2 and the resultant urine is acidic with a low HCO_3 content.

In pulmonary hyperventilation, excessive amounts of CO_2 are removed reducing the serum HCO_3 and the glomerular filtrate HCO_3 load presented to the renal tubular cell, but the systemic alkalosis produced lowers the tubular synthesis of H^+ and $Na^+ - H^+$ exchange with the glomerular filtrate resulting in an alkaline urine containing HCO_3. In this instance, the systemic and renal intracellular pH effects are more potent in determining pH and urine composition than is the filtered HCO_3 load.

In respiratory acidosis with pulmonary CO_2 retention, the serum HCO_3 and glomerular filtrate HCO_3 are increased but the systemic and renal tubular intracellular acidosis result in increased tubular synthesis of H^+ and increased $Na^+ - H^-$ exchange with the glomerular filtrate with the production of an acid urine low in HCO_3 content. When large amounts of KCl are administered to a normal person, the administered K^+ tends to assume an intracellular position while the administered Cl^- remains extracellular. As a consequence, intracellular H^+ concentration is reduced and a simultaneous intracellular alkalosis and extracellular acidosis result with reduction of serum and glomerular filtrate HCO_3. Renal tubular H^+ synthesis is reduced by the intracellular alkalosis and, in addition, the large amount of K^+ competes with the renal cell H^+ for Na^+ exchange in the glomerular filtrate. Thus, renal cell $Na^+ - H^+$ exchange is markedly reduced and an alkaline urine of high HCO_3 content is produced despite extracellular "evidence" of acidosis (decreased serum HCO_3).

By contrast, in KCl depletion states, the reduction of intracellular K^+ is compensated by the movement of both Na^+ and H^+ intraceulularly, resulting in intracellular acidosis and extracellular alkalosis as manifested by increased serum HCO_3. The intracellular acidosis of the renal tubular cell results in increased H^+ synthesis in increased $Na^+ = H^+$ exchange and because less K^+ is available to compete with H^+, in augmentation of $Na^+ = H^+$ exchange, with the consequence that an acid urine of low HCO^3 content is produced despite extracellular "evidence" of alkalosis manifested by the elevated serum HCO_3. It can thus be seen that in both K^+ deficiency and K^+ excess states, urine of paradoxical quality is produced which can be understood only in terms of events occurring within the renal tubular cell between Na^+ H^+ and K^+ ions.

The administration of acetazolamide (Diamox®) blocks the action of the enzyme carbonic-anhydrase, apparently by competitive inhibition. This results in less H^+ synthesis by the renal tubular cell, less $Na^+ - H^+$ exchange and the production of an alkaline urine with high HCO_3 content and consequent reduction of the serum HCO_3.

Finally, it is of interest to study the effects of administration of the sodium salt of a rapidly excreted anion such as $SO_4=$ (in the form of Na_2SO_4) in the normal human as contrasted to the human with excessive sodium

retention. In the normal subject, serum HCO_3 is unaffected by the neutrality of the administered salt, and as a consequence renal tubular H^+ synthesis and Na^+ exchange is normal so that an acid urine of low HCO_3 content results solely from the sulphate content of the glomerular filtrate. In contrast, in subjects with excessive sodium retention, as in all states of secondary aldosteronism, the adrenal stimulus for increased Na^+ exchange from the glomerular filtrate results in the loss of excessive amounts of H^+ and K^+ into the urine so that maximum degrees of acidification of the urine are achieved upon Na_2So_4 administration with reduction of urine pH levels to as low as 4.0, a level never achieved normally.

I would now like to elaborate my remarks on the effect of varied K^+ states on renal pH control. K^+ is considered to be an important cofactor in the function of such intracellular enzymes as ATP which provide for energy utilization. In potassium deficiency states, the minimim pH achieved by the stimulation in gastric juice production and by the kidney in acidification of the urine is markedly impaired, as is renal osmotic concentration of the urine so that a urine of fixed specific gravity and neutral pH is more likely to be produced. This can be verified by loading subjects with NH_4Cl before and after K^+ depletion and noting changes in the urine produced. When K^+ depletion is achieved after NH_4Cl is administered, the ability of the kidney to acidify and concentrate the urine is markedly decreased and this state is reversed by administration of K^+. In addition, the administration of NH_4Cl for periods of longer than three days tends to deplete the body of K^+ by causing K^+ losses from the intracellular spaces and replacement with H^+ so that in these circumstances again, renal inability to acidify and concentrate results, again reversed by K^+ adminstration. The chronic use of NH_4Cl therapeutically is thus undesirable from this standpoint. The effect of K^+ depletion on renal function is also seen in diabetic acidosis where a urine is produced that is less acidic than might be expected by the severe acidosis present systemically. In these conditions, the serum K^+ concentration is a poor index of total body K^+ content for three reasons: (1) the systemic acidosis reduces intracellular K^+ (by replacement with H^+ and Na^+) and raises extracellular K^+ to an unrepresentative level in serum; (2) the extracellular volume is contracted tending to concentrate its contained electrolytes; and (3) the oliguria usually present to a variable degree tends to promote K^+ retention which is soon reversed on fluid and insulin therapy. For these reasons, we usually suggest the early and generous use of K^+ replacement in the course of a diabetic acidosis therapy feeling that K^+ depletion is frequently present to an unexpectedly severe degree.

I would like to conclude my remarks with a discussion of the role of renal NH_4^+ production in renal control of body pH. Of the total amount of 60 meq of non-volatile anions of which the kidney must rid the body each day, only 20 meq of this is achieved by titratable acidity and pH changes and the remaining 40 meq is excreted by means of union with NH_4^+ produced by the renal tubular cell from H^+ of the carbonic anhydrase reaction and NH_3 from the action of glutaminase on blood glutamine and other $NH_3=$ joining compounds. Very little NH_3 is present in the free form in arterial blood. It is carried chiefly as glutamine from the liver to the kidneys. The liver is the chief site of urea synthesis from NH_3 in the body.

Renal NH_4^+ synthesis can be discussed in two general categories. In the first, variations in the transport of NH_3 occur. In acid urine, NH_4 is increased and in alkaline urine NH_4^+ is decreased. Similarly, in oliguria, urine NH_4^+ is decreased and in polyuria, urine NH_4^+ is increased. In the second category, variations of NH_4^+ production occur usually accompanied by concomitant changes in the concentration of glutaminase enzyme, in the kidney. For example, in chronic systemic metabolic acidosis, urine NH_4^+, and renal glutaminase concentration are all increased whereas they are decreased in metabolic alkalosis. They are similarly increased in total body K^+ depletion or under the influence of acetazolamide (Diamox), chiefly by virtue of their effect on intracellular H^+ and subsequent renal NH_4^+ synthesis and $Na^+NH_4^+$ exchange with a glomerular filtrate.

In patients with primary aldosteronism who demonstrate an alkaline urine with urinary K^+ loss and Na^+ retention and total body K^+ depletion, the chief method of non-volatile anion excretion occurs via renal NH_4^+ syn-

thesis and exchange, despite the urine alkalinity while titratable acidity production is low. When KCl is administered to replace depleted body K^+ stores, the urinary pH falls and the partition between NH_4^+ and titratable acidity in anion union becomes approximately equal.

The ability of the kidney to synthesize NH_4^+ for Na^+ exchange is limited by the amount of glutamine transported to the kidneys in the blood (usually 400 meq. per day maximum) and the ability of the renal tubular cell to synthesize H^+ from the carbonic anhydrase reaction. This limits renal NH_4^+ production to about 300-400 me. per day maximum. A total amount of NH_4^+ and H^+ needed for non-volatile anion exchange is approximately inversely proportional to the serum HCO_3 concentration and is easily exceeded in such states as diabetic acidosis, excessive anion production in diabetic acidosis and decreased renal NH_4^+ synthesis in the uremic. Since the liver is able to detoxify 24 gms. of NH_4Cl daily to urea, free NH_3 elevation of the blood rarely results from diabetic or uremic acidosis.

By way of contrast, alkalosis is much less of a clinical problem than acidosis chiefly because of the ease of alkaline excretion in the urine through suspension of tubular exchange of Na^+ and H^+. Huge quantities of $NaHCO_3$ (up to 1000 meq. per day) can be excreted by patients with moderately reduced renal function without great change in body pH and only in terminal renal failure is ability to excrete alkali impaired, and then chiefly because of limitation of glomerular filtrate and not of limitation of tubular function.

Doctor Roberg: Thank, you, Doctor Milne, for your interesting and comprehensive discussion of the subject.

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Hyponatremia

Over the past decades edematous patients undergoing repeated treatment with mercurial diuretics have been observed to exhibit, on occasion, a rapid deterioration of circulatory and renal function. This state was found to be associated with a depressed concentration of sodium in serum, and from this association was born that enigmatic and contentious term, the low-salt syndrome. The rapid development of flame photometry quickly established hyponatremia to be a not infrequent biochemical sign in such patients wrung dry by the overenthusiastic use of diuretic measures or in patients whose edema had become obstinately refractory to conventional forms of therapy. Nor did the results of the ubiquitous, if not indiscriminate, measurement of serum sodium levels stop there. It was soon appreciated that many chronically ill patients, with and without edema, were hyponatremic and were adamant in their resistance to the endeavors of the therapist to restore the aberrant dimension to his preconceived ideas of physiological normality. Patients with normal or excess stores of sodium clearly contained water in even greater excess of at least that portion of body sodium that was in aqueous solution; and their regulatory mechanisms were subverted to the maintenance of this distorted relationship, although for the whole body the excess of sodium was greater than that of water. Thus, the etiologic significance of hyponatremia became more and more befogged, although all too clear was its prognostic significance as a hallmark of impending dissolution. *Editorial. Hyponatremia: Clinical State or Biochemical Sign? Circulation. Dec.* 1956.

Glaucoma Detection in General Practice

EDWARD GALLARDO, M.D., LA SALLE

AS an introduction to the subject, it might be pertinent to give a few figures in order to emphasize the importance of glaucoma as a clinical entity and in the field of social economics.

Glaucoma is the single greatest cause of blindness in the United States. According to the latest figures[1], about 43,500 persons, or 13% of all the blind in this country, lost their vision as a result of glaucoma. The incidence of undetected glaucoma has been estimated at about 2% of the population above the age of 40, or approximately 1,200,000 persons.

Hankla[2], during a survey conducted in Philadelphia in 1953, found that in the age group 35 to 44, the incidence of glaucoma was 1.5%, while in those over 65 years of age it was 3.7%. No difference was found by race or sex within the same age groups.*

Glaucoma attacks both eyes nearly always, although rarely at the same time. A lapse of from a few hours to five or more years may be observed. In a recent study by Winter[3], it was shown that in cases with acute congestive glaucoma, 62% of the attacks in the second eye occurred within five years of the first attack in the first eye.

Blindness from glaucoma is costing the United States taxpayer about $16 million annually in pensions, rehabilitation, and professional care. These figures are bound to grow, proportionally to the growth in total population, as well as the growth in the older age groups.

There are many facts and opinions regarding the etiology and classification of glaucoma. To quote from the more relevant literature only, on etiology alone, would take hours. The subject is being revised from time to time as new evidence, experimental or clinical, is published. Therefore, due to the limitation of time, and the prevalence of general practitioners in this audience, I shall limit this presentation to a brief outline of the two main categories of primary glaucoma: the acute and subacute congestive type, also called narrow or shallow angle glaucoma, present in 40 to 45% of cases, and the chronic simple noncongestive, or wide angle glaucoma, comprising about 55 to 60% of the cases.

The first type is relatively easy to diagnose in most instances and responds well to therapy. The chronic variety is more difficult to detect, and is often unpredictable to medical as well as surgical management. Both types, together with many of the secondary glaucomas due to uveitis, cataract, trauma, or tumors are characterized by one common feature which may be temporary or constant, and that is the elevation of the intraocular pressure. It follows that, in the present state of our knowledge, the measurement of this pressure becomes the first and most important step in diagnosis.

Gunderson[4], stated "there is no substitute for tonometry, and only with a tonometer can the early diagnosis be made." To this I like to add that tonometry should be included as a routine procedure in every physical examination. The tonometer is just as easy to use as the sphygmomanometer and, with proper care, just as accurate. Of course, a good number of cases of chronic simple glaucoma will escape detection by the use of tonometry alone, but many others will be diagnosed or suspected before irreversible changes take place in the optic nerve.

The diagnosis of true congestive glaucoma is difficult to miss. Onset of pain is severe and sudden, with equally sudden impairment of vision. The pupil is fixed and half dilated. The

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Read at the 117th Annual Meeting of the Illinois State Medical Society, Chicago, Ill., May 23, 1957.

**Since the first draft of this paper, Kurland and Taub (Am. J. Ophth 43:539, April 1957) found a higher rate of primary glaucoma in females, outnumbering males almost two to one in the city of Rochester, Minn.*

globe is hard and painful to palpation. The intraocular pressure is generally above 60 mm. Hg. with the Schiotz tonometer, or well above the normal line with the Berens-Tolman tonometer. In subacute cases of congestive glaucoma, however, the onset may not be as dramatic; some of the typical signs and symptoms may be obscured or absent. Finger palpation becomes unreliable as a method of testing the intraocular tension. Here, the use of the tonometer during the attack is a must for correct diagnosis, due to the fact that once the acute episode is over (sometimes a few hours), the eye may return to normal, often without the benefit of therapy, or in spite of it if treated for other inflammatory diseases, with which it may be confused. Here is where most of the mistakes are made with such conditions as iritis, keratitis and conjunctivitis. In the table of differential diagnosis, therefore, we are concerned with the symptomatology apparent in a majority of cases. There are exceptions in each disease group, where one or several of the symptoms may be slight, or exaggerated. and occasionally even absent.

The diagnosis of chronic non-congestive glaucoma, on the other hand, must be made by correlating several symptoms which are not, as a rule, present at the time of the first examination. Therefore, the history of the patient becomes all important. The following points should be included as a minimum questionnaire:

1. Blindness in the family, not due to injury or senile cataracts.
2. Frequent changes of glasses, none of which is satisfactory.
3. Inability to adjust to darkened rooms, such as theater, TV, etc.
4. Occasional blurring of vision, headaches, vertigo, nausea.
5. Rainbow rings around lights.
6. Loss of peripheral vision.

When any of the above symptoms or a combination of them is present, glaucoma should be suspected and a tonometric reading may change the doubt into a positive diagnosis. If the tension is normal, the patient should be referred to an ophthalmologist for further study, including visual fields, gonioscopy, and if necessary a provocative test which will bring the hidden ocular hypertension into a manifest level.

TECHNIQUE FOR TONOMETRY

The patient should lie flat on his back and 1 or 2 drops of 0.4% Dorsocaine® HCl or any other suitable anesthetic, instilled in each eye. After 2 or 3 minutes, allowed for the local anesthetic to take effect, the patient is reassured as to the absence of sensation in the eyes and asked to look straight up at a fixed point in the ceiling, or better yet at his own thumb held about 16 inches directly above the eyes. The lids are separated carefully, avoiding pressure on the eyeball. The footplate of the tonometer is applied to the center of the cornea and the barrel of the instrument is lowered till the needle moves and then stops at a fixed level. oscillating gently with the patient's pulse. The procedure is now repeated in the opposite eye and the tension in each is recorded and compared. One should avoid pumping the tonometer while resting on the eye because this maneuver will bring down the pressure, and occasionally produce tears in the corneal epithelium.

A difference of more than 5 mm. Hg. on the Schiotz tonometer in either eye is considered significant, even when the pressure is below 25 mm. With the simplified Berens-Tolman instrument, designed for use in general practice, the indicator line will move towards a red dot if the tension is high, but it is not calibrated to register small differences in pressure. Nevertheless, it is considered adequate for

(Glaucoma) Table of Differential Diagnosis

	Pain	Photophobia	Congestion	Secretion	Pupils	Tension: mm Hg
IRITIS (acute)	±	+++	++	0	contracted	normal or lower
KERATITIS	±	+++	+++	++	normal	normal (16 to 24)
CONJUNCTIVITIS	±	±	+++	+++	normal	normal
CONGESTIVE GLAUCOMA	+++	±	+++	0	dilated	40 or more (Schiotz) High (Berens-Tolman)

the average cases of glaucoma when used according to instructions (5).

EMERGENCY TREATMENT

A person with an attack of acute congestive glaucoma is a true emergency, with which every physician may be confronted, particularly in rural areas. Therefore, I feel justified in mentioning something about therapy. Treatment must be directed at the immediate reopening of the angle of the anterior chamber, which has been obliterated by the root of the iris pushing against the corneoscleral junction, blocking the outflow of aqueous humor. This can be attained by the use of pilocarpine 2 to 4% solution, instilled every 1 or 2 hours, combined with Diamox® 250 milligrams orally, followed within a few hours by 250 mg. of a delayed action tablet of the same drug. The pressure-lowering effect of Diamox and pilocarpine are additive, Diamox by reducing or suppressing the formation of aqueous fluid, and pilocarpine by improving the outflow through miosis. Strong analgesics and hypnotics, of course, are almost always necessary.

If the tension remains high under this management for more than 6 to 8 hours, surgery should be done without delay. Results of treatment are good in a majority of cases after the first attack. On successive attacks, it becomes progressively worse, and more complicated procedures, such as lens extraction, may be necessary in addition to iridectomy and the continued use of miotics.

The treatment of chronic simple glaucoma is often disappointing, regardless of the method used. This is due not only to our incomplete knowledge of the etiology, but also because the patient is frequently unaware of the disease until the vision is greatly reduced as a consequence of optic nerve atrophy. In some cases, nevertheless, the medical management with miotics and Diamox seems to offer more hope now than it did a few years ago, before the introduction of Diamox.

Finally, I like to emphasize the obvious, but neglected fact, that many victims of glaucoma are first seen by the general practitioner, and the detection of a fair number during the early stages could be made in his office. The extra time required would be that of a few questions pertinent to the eye included in the general history, and 3 to 5 minutes added for tonometry. Recent evidence provided by glaucoma clinics and surveys in large cities, indicate that a nation-wide screening program, if properly organized with the co-operation of men in general practice and industrial medicine, would reduce materially the incidence of undetected glaucoma, and resultant blindness.

The following steps are suggested as a tentative outline for the implementation of such a program:

1. The obligatory teaching of tonometry and ophthalmoscopy in medical schools, on the same level of proficiency as auscultation or sphygmomanometry.
2. Demonstration of tonometry to medical staff members in all hospitals by local ophthalmologists or other trained personnel.
3. Occasional showing of a technical film at hospital staff meetings, dealing with various aspects of glaucoma[6].
4. The formation in small towns of local chapters, including professional and lay persons affiliated with the respective State Society for the Prevention of Blindness.
5. The production of non-technical films on glaucoma and other blind-producing diseases for use before lay audiences.

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The Therapeutic Effectiveness of a Fungistatic Powder for Tinea Pedis

GEORGE H. SCHERR, PH.D., AND ZENO N. KORTH, M.D., OMAHA, NEBRASKA

THE use of a powder preparation as a prophylactic measure for the superficial mycoses or as an adjunct to the use of a liquid or ointment in the course of therapy has become well established in the profession. This report presents clinical support for the successful therapeutic use of a powder preparation in the treatment of tinea pedis.

In the course of treating tinea pedis with certain preparations (Scherr *et al.* 1955) a number of patients who did not respond to the various regimens were then placed on Asterol®* powder, here designated by the code # 28. Patients were directed to sprinkle the powder on and between the toes once a day in the morning after washing but immediately before putting on the socks. The preparations used initially were liquids, some in common use for the treatment of the superficial mycoses. Their specific composition is not pertinent to the results and conclusions of this study and they are designated by various code letters. The criteria for infection, course of the disease, and other aspects of the methology were those previously used and reported (Scherr *et al.* 1955).

Following the use of the various liquid preparations the course of the infection was graded as regression (R), no charge (NC), improved (I), or cured (C).

In a few instances, which are designated in the accompanying table, patients having tinea pedis were given #28 powder as the initial therapeutic preparation.

This report was compiled from treatment data for children at the St. James Orphanage in Omaha, Nebraska. Because of the close supervision given to the children, this study was very well controlled.

Table 1 records the results of this study. The mean time to cure, using Asterol powder, was 21.6, 23.5, and 32.0 days for the mild, moderate, and severe infections respectively; the per cent cured for this series was 88%, 94%, and 75% respectively. It is significant that the cure was as effective whether the powder treatment fol-

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TABLE 1

The Therapeutic Effectiveness of Asterol Powder for Tinea Pedis

Patient	Age	Sex	Initial Severity of Infection	Initial Preparation Used	Results[1] Days	Severity	Asterol Power[2] Results Days
LB	9	F	Mild	C	NC-30	Mild	C-15
CC	6	F	Mild	B	NC-30	Mild	C-16
CS	6	F	Mild	C	NC-30	Mild	C-9
JB	10	M	Mild	A	NC-27	Mild	C-16
AB	8	M	Mild	C	NC-27	Mild	C-10
HC	9	M	Mild	C	NC-27	Mild	R-7
DM	8	M	Mild	B	NC-27	Mild	C-10

(Continued on following page)

TABLE 1 (Continued)

CV	13	M	Mild	B	NC-27	Mild	C-10
HC	10	M	Mild	SM	NC-30	Mild	I-21
DF	14	M	Mild	# 28	C-35		
FC	10	M	Mild	OM	NC-30	Mild	C-21
BG	9	M	Mild	OM	NC-60	Mild	C-45
JH	11	M	Mild	OM	NC-21	Mild	C-21
EL	9	M	Mild	# 28	C-30		
LM	10	M	Mild	# 28	C-21		
RM	8	M	Mild	# 28	C-30		
DW	10	M	Mild	# 28	C-60		
CS	7	F	Mild	A	NC-37	Mild	C-9
MAC	12	F	Moderate	C	I-40	Mild	R-7
MT	13	F	Moderate	A	I-18	Mild	C-16
SW	5	F	Moderate	C	I-13	Mild	C-9
JB	4	M	Moderate	A	I-29	Mild	C-10
RU	3	M	Moderate	B	I-29	Mild	C-16
PW	9	M	Moderate	A	I-27	Mild	C-22
LM	9	M	Moderate	OM	I-40	Mild	C-45

(Mild) Mean time to cure — 21.6 days
Per cent cured — 88%

IMC	11	F	Mild	B	R-30	Moderate	C-40
DT	8	F	Mild	B	R-30	Moderate	C-16
RT	5	M	Mild	B	R-29	Moderate	C-22
BW	4	M	Mild	B	R-29	Moderate	C-22
MB	13	M	Mild	OM	R-21	Moderate	C-22
SH	4	M	Mild	OM	R-21	Moderate	C-16
CG	13	F	Moderate	C	NC-30	Moderate	C-45
BJH	12	F	Moderate	B	NC-30	Moderate	C-37
MB	12	M	Moderate	B	NC-27	Moderate	C-21
RG	3	M	Moderate	C	NC-30	Moderate	C-10
JT	4	M	Moderate	A	NC-29	Moderate	C-23
EV	15	M	Moderate	# 28	C-21		
HP	21	M	Moderate	# 28	C-21		

[1] R — regression, NC — no change, I — improved, C — cured.
[2] Same as # 28.

BC	10	M	Moderate	OM	NC-30	Moderate	C-30
MM	11	M	Moderate	# 28	C-53		
JT	5	F	Severe	B	I-30	Moderate	C-22
NG	4	M	Severe	C	I-27	Moderate	C-22
EL	8	M	Severe	C	I-19	Moderate	C-16
RL	12	M	Severe	OM	I-21	Moderate	C-17

(Moderate) Mean time to cure — 23.5 days
Per cent cured — 94%

DF	13	M	Mild	A	R-7	Severe	C-50
BC	10	M	Moderate	B	R-27	Severe	C-16
MS	5	M	Moderate	B	R-29	Severe	C-38
RH	14	M	Severe	B	R-12	Severe	C-22
RL	11	M	Severe	B	NC-26	Severe	NC-16
RL	10	M	Severe	C	NC-26	Severe	C-30
LW	4	M	Severe	A	NC-29	Severe	C-36
PS	11	M	Severe	# 28	C-16		

(Severe) Mean time to cure — 32.0 days
Per cent cured — 75%

All Patients: Mean time to cure — 23.7 days. Per cent cured — 88%.

lowed the unsuccessful use of another preparation or was the initial agent prescribed, although the time to cure was generally greater in the latter. This observation is more pertinent to the mild cases, since too few moderate and severe cases were initially treated with Asterol powder to make an overall generalization.

The mean time to cure all patients, 23.7 days, and per cent cured, 88%, compare favorably with the results obtained with the liquid fatty acid preparations. Thus, when children at St. James Orphanage were treated for tinea pedis with Sopronol®† under comparable conditions, the mean time to cure was 19.3 days and 81.8% were cured (se Scherr, *et al.* 1955).

It is clear that Asterol powder was successful as a therapeutic agent for tinea pedis. We cannot say at this time whether this success could be duplicated for other fungistatic or fungicidal powder preparations or is inherent in the specific agent used here. We believe that a major contributing factor for the favorable results reported might be the fact that this study was done during the summer months and that perspiration mixing with the powder during the course of the day produced the effect of a paste or ointment. There were a few cases in which this powder was used as a therapeutic agent during the winter months with little success, but too few cases are available to warrant any conclusions.

The ease of application of a powder preparation was significant in insuring the periodic use of the prescribed agent by the patient. In our experience, there is more likelihood of the patient's losing patience with the necessity of the periodic use of liquid or ointment preparations than with a powder. Thus, despite the increased time to cure for the powder preparation used here, greater ease of application warrants further observations as those reported here, confirming the advisability of increased use of powder preparations as therapeutic agents for tinea pedis.

†Wyeth Laboratories, Inc.

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Infections from birds

Psittacosis is not a grave danger to public health and treatment with some of the newer antibiotics has been successful. But it can be an alarming and a distressing disease. In our present state of ignorance, prevention will not be easy. Active immunization is possible but few except bird fanciers are likely to ask for it. Without examples plain to see, it would be hard to persuade the public that any harm can come from a bird so elegant and amusing as the little parrots. If pigeons spread the disease this will be one more reason for reducing their numbers. But so far they seem to have defied all methods designed for their annihilation in town and country. Before we are compassed about with any more restrictions and prohibitions it would be wise to try to establish beyond doubt the source of the two infections which are detected each week. *Editorial. Foul Fowl. Lancet, June* 1, 1957.

A Clinical Evaluation of L-Glutavite* in the Treatment of Elderly Chronic Deteriorated Mental Patients

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THE ubiquitous bodily distribution of glutamic acid, and its apparent participation in several metabolically significant processes, have evoked much speculation as to its clinical importance and therapeutic usefulness, particularly in the central nervous system where it is found as a prominent constituent[1]. Various roles have been ascribed to it: accelerator of brain respiration; stimulus to synthesis of acetylcholine; adrenergic substance; and detoxifier of ammonia[2].

Several previous studies from this laboratory have shown that monosodium 1-glutamate is the form in which glutamic acid is best tolerated and absorbed orally[3]. Furthermore, a daily intake of 15 grams in three 5 gram doses is effective in producing significant rises in plasma level and is devoid of the toxic side reactions often encountered with higher dosages[4]. The administration of 5 grams of monosodium 1-glutamate three times daily over a period of eleven months to 27 chronic mental patients of various ages failed to disclose any significant changes statistically in perceptual and motor co-ordination tests. However, 17 patients showed clinical improvement in one or more of the following areas: activity, affect, intellection, socialization, and thinking[5].

Recently L-Glutavite, a "cerebral tonic" for the geriatric patient, containing a mixture of monosodium 1-glutamate 3.48 gm., niacin 45 mg., thiamine mononitrate 0.6 mg., riboflavin 0.8 mg., ascorbic acid 30 mg., ferrous sulfate 11 mg., and dicalcium phosphate 910 mg., has been prepared in packet form by the Gray Pharmaceutical Co. The rationale for this type of therapy has not been established, but some of the empiric reasons are apparent, and have been discussed by others[6,7].

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METHOD

The study reported here sought to determine the therapeutic efficacy of L-Glutavite on the general behavioral adjustment of a randomly selected group of 24 elderly, long-term, chronic, deteriorated psychotic male patients. Their average age was 65 years, and they had been hospitalized on the average slightly over 20 years. Diagnostically the group comprised 10 patients with organic brain syndrome, 9 with functional psychosis, and 5 with mental deficiency.

The patients were divided randomly into two groups, characterized for the most part by passive, regressed, manneristic, idle, apathetic, untidy behavior. They resided on the same feeding ward prior to the onset of the experiment, and except for the addition of the experimental supplemental feedings in chilled tomato juice, there was no apparent substantial change in environmental surroundings, daily routine, and accustomed personal contacts. Psychiatric ward rounds were made daily, and the patients were tested psychologically on three occasions: prior to the onset of the experimental regimen, at midpoint, and again at the end. There was no attempt to change the ward program from the usual routine, and a careful effort was made not to influence the attitude or expectations of the regularly assigned ward personnel.

A "double blind" cross-over technique was utilized with each patient serving as his own control. In the premedication phase all patients received plain chilled tomato juice with their three daily meals. This was continued for a period of three weeks so that all would become accustomed to the vehicle. The two experimental preparations were then introduced in the vehicle —the one containing L-Glutavite, the other an identical vitamin-mineral mixture but no mono-

sodium 1-glutamate. After six weeks the two medications were reversed and continued for an additional six weeks.

Because the previously cited investigations indicated that the minimum effective daily dose for monosodium 1-glutamate by the oral route was 15 grams, the Gray Company's recommended minimal dosage of three packets daily was doubled. Thus, each patient received 20.88 grams of glutamate daily on the average, but with the occasional missed and partially consumed doses inevitable in this type of clinical experiment the actual intake was probably more of the order of 15 grams daily.

Effects were evaluated by a combination of findings from daily psychiatric ward rounds, periodic psychological tests, and multiple independent ratings on a specially devised, simplified, 40 item behavioral check list sampling 10 areas: appearance, behavior, mood, speech, thought, socialization, activity, learning, sleep, and eating. All ward workers including sub-professional personnel contributed to these ratings at regular intervals. None of the raters was given information as to the nature of the medication being used or what possible changes to look for. Nor could they refer back to previous ratings or discuss their opinions with others. In this way it was hoped more objective running evaluations would be obtained. In all 600 ratings were completed on the 24 patients. These were grouped for analysis and comparison by individual patients, raters, and collectively. Trends were scored simply as (0) no change; (+1) minimal improvement; (+2) definite improvement; (−1) minimal impairment; (−2) definite impairment. The individual patient's behavior prior to the onset of the experiment constituted the base line for scoring.

Psychological tests were attempted prior to all medication, and again at the six week cross-over point, and twelve week termination. Five different tests were employed. All were selected for simplicity of comprehension, and brevity of execution, in the hope this would assure greater participation and more reliable performance from an admittedly relatively "untestable" population. The tests included: Wechsler-Bellevue I: digit span and vocabulary subtests; Ravens Progressive Matrices, Scales A and B; Human Figure Drawing; and Ordering of 8 circles according to magnitude of gaps from small to large, a subtest from the Galesburg Deficit Battery.

RESULTS

For all practical purposes there were no management problems nor significant side effects on either supplemental feeding. Only two patients rejected the feedings with any regularity, and this was primarily on a delusional basis. However, one patient did report a slight flushing effect which did not occur with plain tomato juice. This presumably was due to the niacin present in both supplemental feedings in relatively high dosage (90 mg. t.i.d.). There were a few isolated cases of transient gastrointestinal intolerance with vomiting or diarrhea. There were also two instances of localized dermatitis with itching which subsided after brief topical therapy.

Inspection of data revealed no meaningful trends suggestive of improvement or impairment on any of the psychological tests for individuals or groups in either phase of the double blind study. The behavioral check-lists also yielded no meaningful correlations with respect to the two supplemental feedings employed.

However, when the total number of responses on all psychological tests were grouped and subjected to chi square treatment it was found that a somewhat larger result was obtained during periods of L-Glutavite feeding, than during the vitamin-mineral feeding. Neither value was statistically significant. However, since a cross-over technique was followed this could be more than a chance occurrence, and furthermore, it correlated with the presence or absense of monosodium 1-glutamate.

Subjective clinical impressions gained from daily psychiatric ward rounds are somewhat of the same order. A moderate degree of individual improvement was observed in the general activity level, sociability, and participation in ward routine. Untidiness, apathy, and confusion lessened, but intellectual and ideational impairments remained essentially unchanged. While these improvement trends were noted in most patients, and appeared to increase progressively with time, a greater degree of correlation with the use of L-Glutavite seemed apparent.

There also was a general improvement of appetite and moderate weight gain on both regimens, but a somewhat greater weight gain oc-

curred during those periods when L-Glutavite was the supplemental feeding. Several patients spontaneously requested a resumption of supplemental feedings after the experiment was concluded.

Tabular Summary of Results Obtained

	Brain Syndromes	Functional Psychoses	Mental Defectives	Total
Definitely Improved	3	0	1	4
Moderately Improved	5	6	3	14
No Appreciable Change	2	3	1	6
Worse	0	0	0	0

DISCUSSION

Himwich, et al[5] working with 24 chronic mental patients over a period of eleven months found that monosodium 1-glutamate in contrast to placebo produced significant clinical improvement in 17 patients in one or more of the following areas in decreasing order of occurrence: action, emotion, intellection, interpersonal relationships, thought processes, and insight. It also was found that equally good results could be obtained with 5 grams as with 15 grams three times daily, while toxic side reactions sometimes seen with the larger doses were absent. Furthermore, discrepancies in the previous literature could be accounted for by the use of three different forms of glutamic acid which are not equally absorbed into the blood stream.

Barrabee, et al[6] studied 30 aged psychotic female patients using L-Glutavite, Metrazol, and vitamins. It was found that all subjects and groups improved significantly in mental and social behavior, but L-Glutavite was the most effective of the three drugs used. The most outstanding improvements occurred in the categories of sociability, productivity, and thought content. Less outstanding improvements were found in self care, co-operation, affect and mood. The least improvement occurred in intellectual functions.

Katz and Kowaliczko[7] found that of 27 elderly institutionalized patients suffering from a variety of chronic physical and mental illnesses, 12, or 44%, demonstrated good or excellent responses to L-Glutavite therapy in regard to a decrease in apathy, depression, and fatigue, an increase in appetite, motor activity, and sensorium. Six other patients demonstrated a fair but noticeable improvement. In all 18, or 66%, responded favorably to some degree.

Wolff[8] also studied the effects of L-Glutavite in senile patients and reported it more effective in improving their mental function than the combination of Metrazol and niacin. It was especially effective in repressed, listless, apathetic, confused patients with memory defects.

While our findings were not as pronounced as the foregoing, in general they parallel the effects reported by the previous investigators. The fact that we worked with a markedly regressed and unresponsive group of patients, and used a much shorter treatment phase (six weeks as against twelve weeks in previous cited studies) may account for the smaller changes observed and our inability to validate our subjective clinical findings statistically.

CONCLUSIONS

L-Glutavite, a soluble powder containing monosodium 1-glutamate, vitamins, and minerals was administered to a group of 24 chronic, deteriorated, elderly, psychotic, mental patients to assess possible general behavioral therapeutic effects. A "double blind" cross-over technique was employed. Half the patients were fed this medication in chilled tomato juice with all meals while the other half received an identical vitamin-mineral supplement but without monosodium 1-glutamate. Feedings were reversed at six week intervals. Effects were evaluated by a combination of daily psychiatric rounds, psychological tests, and multiple independent ratings on a specially devised behavioral check-list executed by all ward personnel at regular intervals.

Of 24 patients studied 4 showed definite improvement, 14 were moderately improved, and 6 had no appreciable change in general behavior.

While the results are not amenable to statistical validation there appears to be a greater degree of clinical improvement on supplemental feedings with L-Glutavite than on the control preparation as manifested by a moderate increase in activity level, sociability, participation in ward routine, lessened apathy, confusion, and untidiness. Appetite and weight gain paralleled these findings. Intellectual and ideational impairments remained essentially unchanged.

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Rheumatic fever concepts

Rheumatic fever is now recognized as a systemic disease characterized by inflammatory lesions that may be widely distributed throughout the connective tissues in various parts of the body. Despite the generalized nature of the rheumatic process, it would be a disease of relatively little significance if it were not for involvement of the heart. This follows from the well known fact that the lesions in most areas, such as the joints, appear to heal completely without detectable residual damage in contrast to those affecting the endocardium, which frequently lead to crippling malformations of the valves. Except for the currently uncommon cases in which overwhelming pancarditis or myocarditis threatens life during the acute phase of the disease, the menace of rheumatic fever can be defined almost solely in terms of these delayed and permanent effects on the valves of the heart. The seriousness of this end result of the disease justifies, and to a large extent stimulates, the continued attempts to clarify the mechanisms involved in the pathogenesis of acute rheumatic fever. *Maclyn McCarty, M.D. Nature of Rheumatic Fever. Circulation. Dec.* 1956.

The origin of isotope

The word isotope, now so familiar, was introduced in Glasgow about 1912 by a medical woman — Margaret Todd, who also was a novelist writing under the name Graham Travers — to fit the concept of elements occupying the same place in the periodic table. The occasion was a social gathering at 11, University Gardens, then the home of Sir George Beilby (father-in-law of the late Frederick Soddy, who originated the concept of isotopes and other achievements in radiochemistry including the first approach to atomic numbers). Having been obliged to use awkward paraphrases to express his isotopic ideas, Soddy said he needed a word for the concept. Dr. Todd immediately suggested isotope — iso, the same, and topos, place. The word indeed had been published a few years before in a context of organic chemistry but there is no reason to suppose that Dr. Todd was aware of that. Purists may like to note that homotope would be more exact. Soddy, however, gratefully adopted the suggestion of isotope and its use in its now accepted sense was first published by him in 1913. *Letters to the Editor. Hugh Nichol. Lancet, June 29, 1957.*

CASE REPORTS

Mobile Lithopedion—A Chance Discovery in Routine X-ray Examination

EDWARD J. KROL, M.D., VINCENT J. GALANTE, M.D., AND GEORGE J. RUKSTINAT, M.D., CHICAGO

"STONE children," or lithipedions, have aroused interest sufficient to stimulate descriptions, drawings, dissections, and analyses for at least 400 years. Nesbitt[1] cites Israel Spach whose work on gynecology in 1557 showed a lithopedion in situ in the opened abdomen of a woman. With many features of lithopedion formation still unexplained, it is easy to understand the aura of mystery attached to the first specimens discovered. Nesbitt[1] believes the grand total of authenticated lithopedions was 258 as of June 1955. The number will not increase much because ectopic gestation is now recognized early and treated surgically, thus removing the almost invariable cause of lithopedion formation.

The latter part of the 19th century saw enormous contributions to descriptive pathology and lithopedions were then classified by Kuchenmeister[2] as follows:

1. The lithokelyphos, in which the membranes alone are calcified and form a shell about an uncalcified fetus.

2. The lithokelyphopedion, in which both membranes and fetus are calcified.

3. The lithopedion in which the fetus is infiltrated with calcium salts and the calcification of the fetal membranes is minimal. Complete extrusion from the membranes may exist and it is thought calcification of the mummified fetus occurs in the adherent vernix caseosa. This author found records of 24 stone children in the first category in women in their 30's who had borne several children. There were three specimens in the second group in women with no additional pregnancies, and 18 children in the third group. The shortest period of carrying a stone child was two years; the longest, 56; and the average, 23 years.

A variation in classification was suggested by Masson and Simon[3] who used the term lithopedion for the entire group. They proposed the term lithotecnon for the true lithopedion. These authors reported nine lithopedions at the Mayo Clinic from 1903 to 1926. Eight of the specimens were removed at operation and one was found at necropsy.

The majority of lithopedions are the result of ectopic gestation. Extrusion of the fetus into the abdomen with variable amounts of covering membranes, or no membranes, lays the groundwork for subsequent calcification. Less credibility has been attached to intrauterine lithopedions in the last century. There was, however, an illuminating report of the latter by Roberts[4] in 1952. His patient, pregnant with twins, developed pain near McBurney's point in the fourth month

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of gestation. Pain subsided gradually and the patient eventually delivered one live 5 lb. 4 oz. (2.4 kg.) female child. Curled around the occiput of this child was a fetus of about four months, almost totally calcified. The placenta contained an infarction, "about the size of a duck's egg" in the place where the cord of the lithopedion inserted. This report is valuable in confirming the fact of intrauterine lithopedion and further demonstrates with experimental clarity the time element of about five months necessary to affect almost total calcification.

The subsequent morbidity of a patient with a ruptured ectopic pregnancy depends on numerous factors such as the amount of hemorrhage, infection, position of the occasional lithopedion, and the effect of the latter on surrounding organs. As indicated by Bacon[5], the danger decreases as the age of the lithopedion increases. Leopold[6] was fully aware of the predisposition of extrauterine fetuses to form stone children. From his experiments with rabbits he surmised that human embryos of as much as three months' gestation would be absorbed. He transplanted rabbit embryos of various ages into the abdomen of rabbit mothers. The youngest embryos were always absorbed while older ones brought about a plastic peritonitis. This experiment succeeded in producing a lithokelyphopedion. The success of these early experiments is all the more remarkable when consideration is given to the fact that lithopedion formation occurs in only 0.81 per cent (Schumann[7]) to 2.0 per cent, (Masson and Simon[3]) of all extrauterine pregnancies. Stander[8] gives the incidence of all ectopic pregnancies as one in 268 pregnancies. The incidence of lithopedion is thus about 1 in 25,000 pregnancies.

Case Report S.S. No. A3950: This patient, a 67 year old white female, was admitted to Holy Cross Hospital with the complaints of anorexia, indigestion, acid regurgitation, and constipation with weight loss of about 8 pounds in the last six weeks. Nausea was present after the evening meal with vomiting at infrequent intervals. Until then the patient felt well with no complaints.

Past history, elicited from her husband, revealed that about 37 years previously, while the patient was washing dishes at the sink, she was seized with severe abdominal cramps and collapsed on the floor. The physician who was called placed her at bed rest with diagnosis of intestinal influenza. Patient remained in bed 10-14 days during which period she was very ill and at times comatose, refusing to eat or eating only by compulsion. After recovering from this illness she remained in good health until the present admission to hospital.

Her menstrual history was not abnormal in any respect. The onset of menses was at 13 years of age; the interval 28 days with 4-5 days of flow and always regular. Her last menstrual period was at age 50 years. The obstetrical history was of Gravida II, Para I with one miscarriage at 3 months gestation some 30 years ago. The patient had never had surgery.

Physical examination on this admission showed a slightly jaundiced woman not acutely ill and in no distress. Temperature 98.6°, blood pressure 170/90. Examination was negative except for a loose, flaccid abdominal wall revealing signs of weight loss and a palpable hard tumor mass over the pyloric region.

Laboratory studies:—Blood count: Erythrocytes 3,300,000 with marked hypochromia and anisocytosis with microcytes predominating. There was polychromatophilia. Leukocytes numbered 8,000 per cu. mm. with lymphocytes 24% and neutrophils 76%. Hemoglobin was 6.95 gms. Coagulation time, 4 minutes. Blood type was Int. A Rh positive. Kahn test was negative.

Blood Chemistry: Blood sugar 119 mg. %; A/G ratio 4.25/1.20 gm; Prothrombin time, 17 seconds; Bleeding time, 2 minutes 35 seconds; thymol turbidity 0.4 units; cephalin flocculation negative; sedimentation rate 60 m.m.; and hematocrit 38.

Radiological Report:—The barium meal of 11/30/55 revealed the stomach to be considerably dilated with evidence of retained food and gastric fluid. The pylorus of the stomach was irregularly narrowed. The stomach emptied with considerable delay. Incidentally noted was

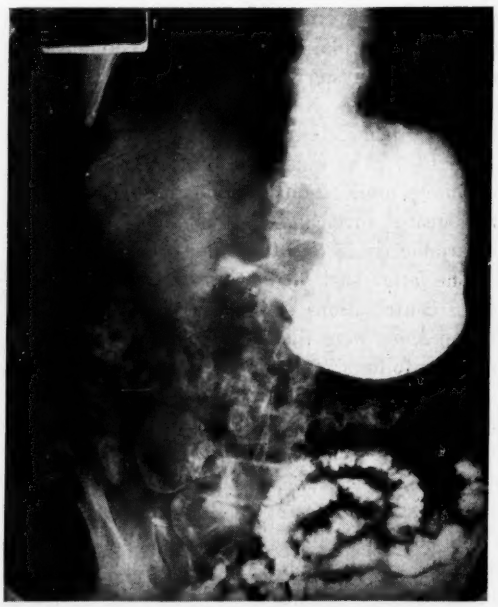

Figure 1. Pyloric lesion is noted with obvious retention of the barium meal. Calcified mass is noted incidentally in lower right abdomen.

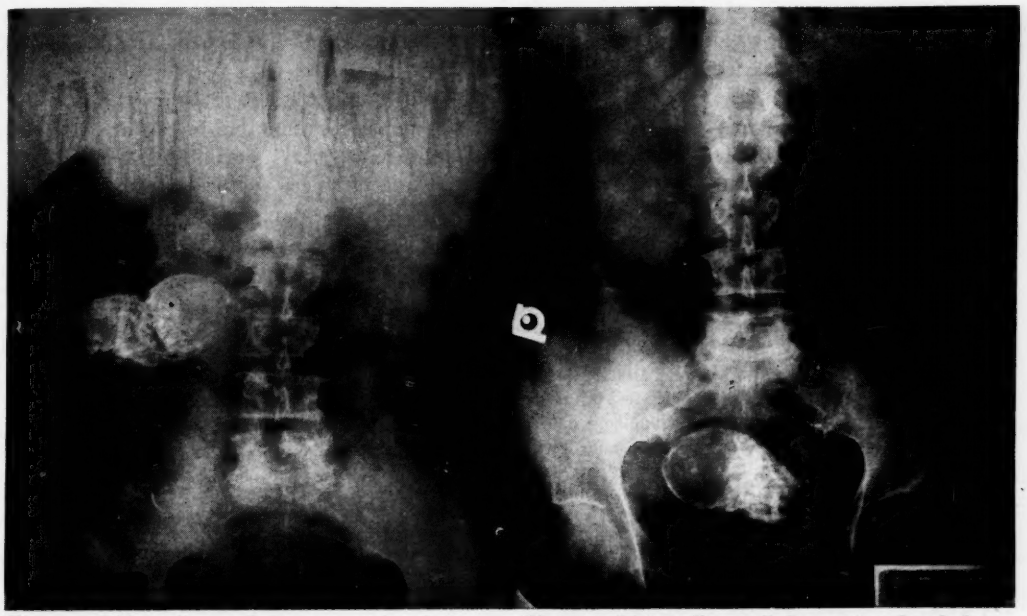

Figure 2. Lithopedion well demonstrated and shows unusual mobility.

Figure 3. Lithopedion well demonstrated and shows unusual mobility.

a calcified mass in the lower right abdomen. Twenty-four hour delayed film of the barium meal study revealed marked gastric retention. (Figure 1)

Additional films were taken on 12/8/55 in the supine, Trendelenburg, and right lateral decubitus positions for further evaluation of the calcified mass noted on the original examination demonstrated a lithopedion. The lithopedion shifted slowly from the lower abdomen to the right upper abdomen. This apparently signifies the attachment of the lithopedion to the omentum or mesentery of the small bowel. (Figures 2-3)

Impression

1. Duodenal obstruction due to possible carcinoma.
2. Lithopedion—intra-abdominal and extrauterine.

Surgical Report:—Several days were taken to correct the blood chemistry picture, after which the patient was taken to surgery and under endotracheal anesthesia, a left paramedian incision was made from the xyphoid to below the umbilicus. The abdominal cavity was entered and the distal omentum brought into view. The most distal omentum was attached to the anterior abdominal area of the lithopedion (3-4 months gestation) and freely movable. (Figure 4)

Figure 4. Lithopedion at time of surgery showing omental attachment.

Figure 5. Radiogram of specimen.

The lithopedion was removed. A palliative gastrojejunostomy was done for relief of duodenal obstruction which was due to inoperable carcinoma of the antrum and duodenum. The abdominal wound was closed and the patient returned to her room in good condition.

Pathological Report 1. 12/13/55:—The specimen consisted of a lithopedion in a typical fetal position. The calcified fetus had a rump-crown length of 15 cm. and its arms and legs were applied tightly to the body. Near the midline there was an attachment 9 cm. vertically and from 8 mm. to 12 mm. broad to a portion of omentum now 7 cm. long. No skin investing tissues were recognizable although a translucent membrane covered the bones which are clearly visible beneath. (Figure 5)

Diagnosis: Lithopedion with omental attachment.

Pathological Report No. 2. 12/14/55:—The tissue mass for biopsy was roughly 7 mm. long and 3 to 6 mm. in thickness. In the paraffin section stained with H and E the tissue mass was for the most part composed of fatty musculofibrous elements in which there was an ingrowth of an adenocarcinoma.

Diagnosis: Adenocarcinoma (clinically of the stomach).

Final Diagnosis:

1. Duodenal obstruction due to carcinoma of the stomach.
2. Lithopedion—intra-abdominal and extrauterine.

SUMMARY

1. A lithopedion with marked mobility is described.

2. This "stone child" probably is the result of an ectopic gestation due to rupture of a fallopian tube 37 years previously.

3. The attachment to the omentum indicates the probable vascular supply to the fetus and lack of obstructive symptoms as the lithopedion formed.

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Hallucinatory drugs

Serotonin (5-hydroxytryptamine, 5-HT) contains the indole nucleus but is a natural component of brain and other tissue. It has been labeled a neurohormone. Its exact neurophysiological function has not been determined, but it is suggested that many vital mental processes are mediated via the action of this neurohormone. A deficiency of this metabolite has been implicated as an etiological factor in certain mental dysfunctions. Serotonin injected peripherally into animals does not result in an appreciable increase in the concentration of this compound in brain tissue. Evidently, some chemical precursor of serotonin must be present in order to traverse the blood-brain barrier. Serotonin also is present in smooth muscle of the body. Serotonin is then a metabolite of the body and many hallucinatory drugs have been called antimetabolites, since they have a structure similar to this essential component of the body and it has been suggested that they evoke their physiological response by a deficiency of serotonin. *Francis W. Hughes. Ph.D. New Psychotherapeutic Drugs. J. Indiana M.A. March,* 1957.

Priapism: Report of Two Cases and Discussion of Treatment

DONALD ROLNICK, M.D., T. L. C. COTTRELL, M.D. AND FREDERICK A. LLOYD, M.D., CHICAGO

THE term priapism comes from Greek and Roman mythology. Priapus, a god of fertility, was represented as a grotesquely ugly man with an enormous and erect organ. Priapic rites were orgiastic[4].

In 1914 Hinman[6] defined priapism as a remarkable pathological condition of prolonged and persistent erection unaccompanied by sexual desire and usually painful. Treatment of this condition offers a challenge to the urologist.

Priapism may be transient or prolonged. Transient cases last a few hours, subside spontaneously usually without complications, and may recur. Prolonged cases may persist for several days or longer. Thrombosis of the corpora cavernosa occurs with persistence of the erection.

Although the majority of cases are idiopathic in origin a wide variety of etiological factors have been reported. Priapism has been reported as a complication of tularemia[5], transurethral resection of the prostate[1], and tetanus antitoxin injection[7].

There is no one completely satisfactory classification of the causes. In his 1914 paper Hinman[6] classified them into:

I. Neurological:
   A. From ascending peripheral stimuli (reflex)
   B. From direct stimuli:
      1. To the spinal cord center
      2. To the nervi erigens or pudendi
   C. From descending peripheral stimuli
      1. Direct
      2. Indirect

II. Mechanical:
   A. Thrombosis or pseudothrombosis
   B. Hemorrhage or hematoma
   C. New growths of penis
   D. Inflammatory swelling and edema of penis

In 1943 Cave[3] classified the causes into:

1. Primary: posterior urethritis, local malignancy, bladder stones.

2. Secondary: leukemia, multiple sclerosis, CNS syphilis, neurasthenia, sickle cell anemia.

In 1950 Abeshouse and Tankin[2] recorded the total number of reported cases as 378 up to that time. Although priapism is rare and the number of reported cases is relatively small, most urologists with a large experience have seen several cases.

The following are reports of two cases:

Case No. 1: A 19 year old white male was admitted to SAFB Hospital on January 6, 1955, with a painful, persistent erection of the penis of six day's duration. He had sustained a minor degree of trauma to the penis three weeks prior to admission as a result of perverse sexual practices. There were no urinary symptoms. Past history was noncontributory.

Temperature was 101.0°F. Physical examination was essentially normal except for a rigid, erect penis tender to palpation.

Urinalysis, blood count, WBC and differential, bleeding and clotting time, prothrombin time, and NPN were normal. Kahn and tularemia fixation tests were negative. A moderate leukocytosis and elevated sedimentation rate were present. *B. proteus* was obtained from the blood culture and corpora cavernosa aspiration. Flat plate of the abdomen and chest x-ray were essentially negative.

Medical treatment consisting of cold compresses to the penis, sedation, estrogens, hexamethonium, cortisone, anticoagulants, and antibiotics failed to give relief.

Spinal and Pentothal® anesthesia were ineffective. Multiple aspirations of the penis were performed under Pentothal anesthesia. A total of 180 cc. of black, thick, stringy blood was removed during these aspirations. It was necessary to perform a dorsal slit. Only temporary regression of the erection occurred with the first two aspirations. Bright, red blood was obtained on the third aspiration. The penis remained flaccid except for a firm mass in the right perineal area which gradually regressed. To date the patient has been impotent.

Case No. 2: A psychotic 40 year old white male was transferred to Hines Veterans Administration Hospital, Psychiatric Service, from Danville Veterans Administration Hospital, Psychiatric Service, on October 5, 1956, with a 10-day history of priapism. On September 21, 1956, he had a biopsy of a growth on the left medial

From Urology Service, Hines Veterans Administration Hospital

malleolus with a pathological report of chronic osteitis. Blood culture, one week following the biopsy, revealed *E. coli.* It was impossible to obtain a history from this patient due to his psychotic state.

Temperature was 100.5°F. Physical examination was essentially negative except for an erect, rigid penis tender to palpation and a firm, tender mass in the region of the left medial malleolus.

Urinalysis, serology, blood count, bleeding time, coagulation time, and prothrombin time were normal. There was a moderate leukocytosis with a normal differential. Chest X-Ray and flat plate of the abdomen were essentially normal. X-rays of the left ankle were consistent with an osteochondroma of the left ankle.

On October 10, 1956, under Pentothal anesthesia, the corpora cavernosa were aspirated using a No. 16 gauge needle. Forty cc. of black, thick, stringy blood was aspirated from the penis. On October 12, 1956, it was necessary to repeat the aspiration because of persistence of the erection. At this time another 30 cc. of black, thick, stringy blood was aspirated. A dorsal slit was performed at the time of the second aspiration. Culture of the aspirated blood revealed *E. coli.* Following the second aspiration the erection gradually regressed and the penis has remained flaccid. To date this patient has been impotent.

On December 11, 1956, a repeat biopsy of the left medial malleolal mass was performed. The pathological report revealed (1) osteochondroma of the bone and reactive scar tissue, and (2) chronic proliferative synovitis of the synovia from the sheath of the posterior tibial tendon.

DISCUSSION

In the first case it was believed the priapism was a result of thrombosis of the corpora cavernosa secondary to trauma incurred during perverse sexual practices. In this case the priapism was followed by a bacteremia. In the second case it was believed a bacteremia from an osteitis of the left medial malleolus caused a thrombophlebitis of the dorsal vein of the penis which in turn produced thrombosis of the corpora cavernosa with resultant priapism.

Numerous methods of treatment of priapism have been proposed. Some, in addition to aspiration of the penis, are incision and drainage of the penis, division of the ischiocavernosus muscle, anticoagulants, ligation of the dorsal arteries of the penis near the pubis, female hormones, and cortisone. Anesthesia of any type is of no avail once thrombosis of the corpora cavernosa has occurred. Mckay and Colston[8] state that thrombosis occurs if priapism exists for more than two days and believe that regardless of the cause priapism should be treated by some method that will remove the thrombosis. Once thrombosis of the corpora cavernosa has occurred aspiration or incision and drainage of the penis are the only satisfactory methods of treatment, regardless of the underlying cause of the priapism. Corpora cavernositis is a serious complication of aspiration and incision and drainage of the penis. The end result of most cases of prolonged priapism is impotence.

The physiology of erection is not completely understood. It is likely the treatment of priapism will remain imperfect until the complex neurological and mechanical factors governing erection are explained.

SUMMARY

1. Two unusual cases of priapism have been presented. One was due to trauma following perverse sexual practices. The second case was the result of a bacteremia originating from an osteitis of the left ankle. Treatment in both cases consisted of aspiration of the penis. As an end result both patients have been impotent.

2. The majority of cases of priapism are idiopathic in origin.

3. Priapism may be transient or prolonged.

4. Two classifications of the causes of priapism are presented.

5. Once thrombosis of the corpora cavernosa has occurred, aspiration or incision and drainage of the penis are the only satisfactory methods of treatment.

6. Treatment is imperfect and probably will remain so until the physiology of erection is completely understood.

7. The end result of most cases of prolonged priapism, regardless of the etiology or treatment, is impotence.

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EDITORIALS

Cancer prophylaxis

Evidence shows that cancer cells escape into the blood during surgical removal of a malignancy. This spillage affects the prognosis even in patients who have a fair change of survival; some individuals succumb to widespread metastases even though the lesion appeared to be well localized at the time the operation was performed.

Cancer cells have been isolated in and near surgical wounds. When the surgical field is flushed with saline, malignant cells are found in the washings. They are isolated also from the blood in veins draining the cancerous area. Now and then they are found in the general circulation postoperatively.

These observations led Warren H. Cole and his surgical associates at the University of Illinois College of Medicine to conduct the following experiments in cancer prophylaxis: They injected from 110,000 to 220,000 cancer cells into the portal veins of rats. One-half were treated at specific intervals with nitrogen mustard or thioTEPA. The other half were used as controls. Cancer cells were isolated in only 7.1 per cent of the treated animals but in 90 per cent of the untreated.

Similar prophylaxis is being used on humans operated on for cancer of the breast, colon, rectum, and stomach. The vessels leading to and from the malignancy are ligated. Half of the initial dose of nitrogen mustard is left in the abdomen and the other half is administered intravenously at the end of surgery. Additional amounts are given daily for three days thereafter.

The project also has caught the imagination of the National Cancer Institute of the U. S. Public Health Service. They are running a large crash project to bring the program to a close as soon as possible, and are using thioTEPA.

This type of research is fundamental and was proceeded by basic animal experimentation and logical clinical judgment. Nitrogen mustard and thioTEPA are toxic drugs and severe reactions occur occasionally. When the results are tabulated, we will know whether this procedure should be adopted.

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Reports of Asiatic influenza coming closer to home

With reports of outbreaks of Asiatic influenza, which first appeared in the Far East in April, bringing the problem closer to home, Illinois physicians must prepare to handle possible epidemic situations in this state.

The Public Health Service of the United States Department of Health, Education and Welfare, each week is reporting a spreading of the disease. From Hong Kong, influenza has spread to other Asiatic countries, necessitating the closing of schools in many places. Millions of cases have been recorded. Attack rates have

approximated 20%, with case fatality rates running around 0.2%.

The disease has been noted in American Army installations and youths camps. Illness clinically resembling influenza also has been reported among passengers and crews of several ships en route to United States ports. Generally, these outbreaks have affected about 10 to 15 % of the persons aboard, and the outbreaks have about run their course by the time of docking on the west coast. Under the circumstances, Illinois cannot hope to escape some cases, if not an epidemic.

Surgeon General L. E. Burney of the U. S. Public Health Service, in a recent letter to Dr. Roland R. Cross, Illinois director of public health, announced the undertaking of an extensive educational and promotional campaign to encourage the maximum use of influenza vaccine on a voluntary basis as quickly as it becomes available. The American Medical Association and the Association of State and Territorial Health Officers will join in this program.

Gen. Burney said that Army medical teams investigating the early epidemics noted that the isolated virus appeared unusual in laboratory tests. Further analyses demonstrated that the virus is type A, but is quite different, antigenically, from any previously known type A strains.

"No protective antibody could be demonstrated in sera from human beings repeatedly vaccinated with previously known type A strains," he said. "Thus our people are probably highly susceptible to this new Asiatic strain of influenza and previously made vaccine offers no protection."

It is generally conceded that the virus is now widely seeded throughout the country. History suggests that the spread of the disease will accelerate with the advent of cold weather. The epidemic is likely to strike most areas almost simultaneously.

The only means of prevention is an influenza vaccine containing the Asiatic strain of virus. Manufacturers were up against it when the strain variant appeared but they are now able to produce a satisfactory monovalent vaccine and are currently working on a large scale production basis.

Dr. Cross has taken cognizance of this situation and in a recent public statement urged everyone to take advantage of the opportunity to be vaccinated. This, he said, should be done as soon as the vaccine is available. The Department of Public Health will not be able to furnish this on a free distribution basis because of limited funds for the purchase of vaccines, he added.

"There is no assurance that the virulence of the influenza virus will not increase so that illness will be much more severe than the relatively mild illness caused so far this year by the Asiatic strain now widely disseminated in America," he said.

"Every possible precaution is being taken to prevent the disease and to be prepared to alleviate suffering if a major epidemic does take place."

The Council on Public Health of the American College of Chest Physicians has issued a report on the situation because its members will have a definite role to play in the surveillance and control of influenza. It said:

"Although individual cases of influenza are not required to be reported by a physician, in order that the first signs of an outbreak can be detected, physicians should call health officers about suspected and proved cases occurring this summer and fall."

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Protection against influenza by intracutaneous injection

With the increasing interest in influenza immunization being stimulated by the epidemic from Asia, I am sure there will be an increase in the demand for influenza virus vaccine. Knowing of our national experience with poliomyelitis vaccine and the associated problems of shortages of vaccine, I am wondering whether or not serious consideration has been given to the intracutaneous method of influenza immunization.

If and when an influenza epidemic occurs there will no doubt be a terrific shortage of influenza virus vaccine. With the use of 0.2 cc. followed by 0.1 cc. intracutaneously, at an interval of time of seven days to two weeks, six times as many people could be immunized as if 1.0 cc. were given intramuscularly in two separate injections. It has been my experience during the past decade that as much protection was

received by this intracutaneous method as with the larger dosage intramuscularly, and with a great deal less reaction to the vaccine. The intracutaneous method has been successful not only in the work of the preventive corps of the navy but has had extensive trial and success in Denmark in much of its preventive work.

E. A. Piszczek, M.D.

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Society exhibit popular at Illinois state fair

The exhibit of the Illinois State Medical Society at the Illinois State Fair in Springfield, August 9-18, was exceedingly well patronized.

"Traffic and Highway Safety" was the theme, and the public displayed keen interest in what the medical profession is doing to cut down the terrific toll of dead and injured.

Members of the Woman's Auxiliary to the Sangamon County Medical Society who staffed the exhibit, and representatives of the division of traffic safety of the State of Illinois who handed out cards pledging observance of traffic laws and highway regulations, were kept busy.

"It was one of the best displays we have ever had," said Dr. Jacob E. Reich of Springfield, whose hard work and planning makes possible the presentation of a successful exhibit.

The exhibit informed the public how it can help cut the traffic toll. There were displays of highway hazards. Attention was called to the dangers of driving if drinking. One panel showed the influence of alcohol on the brain and another, a person's delayed reaction time. In addition, there were continuous motion pictures portraying various phases of accident prevention and safety measures.

The Illinois State Medical Society this year has gone all out to aid in the Governor's traffic accident program, and the Fair exhibit was in line with that policy. No one knows any better than physicians the suffering and misery brought about by automobile accidents.

Consequently, it was most appropriate that in this year's display emphasis was placed on ways to reduce the volume of deaths and injuries. Judging by the comments of those attending the Fair and visiting the Society's booth, the public is most appreciative of the efforts of medicine.

Thousands went away, impressed more than ever by the fact that speed and alcohol are the biggest factors in the heavy death and injury toll.

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A.M.A. makes official changes at top administrative level

In a change at the top administrative level of the A.M.A., Dr. George F. Lull of Chicago was elevated to the newly-created position of assistant to the president. Dr. Lull has been secretary-general manager of the A.M.A. for the last 11 years and will continue in the elective office of secretary.

At the same time, Dr. F. J. L. Blasingame of Wharton, Tex., was appointed by the Board of Trustees to the position of general manager. Dr. Blasingame, who is well known to Illinois medicine, will take over his duties on January 1, 1958.

Dr. Blasingame, who is 50, was elected to the A.M.A. Board of Trustees in 1949, being one of the youngest physicians so chosen. He served as president of the Texas State Medical Association in 1955. Graduating from the Texas Medical School, Galveston, in 1928, he spent three years as a teacher on the medical school staff. He has since maintained a teaching connection at the university.

In announcing the selection of Dr. Blasingame, Dr. Edwin S. Hamilton, Kankakee, Ill., chairman of the A.M.A. Board of Trustees and councilor of the Illinois State Medical Society, said:

"The 164,000 members of the American Medical Association are fortunate in obtaining the services of Dr. Blasingame. He is young, highly experienced, and he is making the change at a great sacrifice to himself. . . . He is dedicated to the principles of good medical care for all of the American people. He possesses all the essentials of leadership, plus knowledge, imagination and sound thinking. His work on behalf of medicine through the years has shown that he has the courage and initiative to shoulder responsibility."

Dr. Lull, in his new office, will relieve the president of the Association of many of the burdens of this office, which have become especially heavy in the last few years. Dr. Hamilton said:

Dr. Lull will serve as spokesman, trouble-

shooter, listening post, information center and as an ambassador of the medical profession in cities and towns throughout the country. His experience is invaluable, and it will be applied in solving medical problems at the state and local level, as well as nationally.

Dr. Lull, 70, joined the A.M.A. staff after serving 34 years in the Army. He has a distinguished military service, emerging as major general of the Army Medical Corps. His last position before retirement was deputy surgeon general of the Army.

His host of friends in the medical profession in Illinois extend to him congratulations on a well-deserved promotion.

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Cameron Parish Medical Rehabilitation Fund

Many millions of American people were thrilled with the news reports on the work of Dr. C. W. Clarke of Cameron, La. During hurricane Audrey, the small town of Cameron was almost completely destroyed. Three doctors worked around the clock for several days in their efforts to save lives and repair physical damage to hundreds of survivors.

CAPSULES, the official newsletter of the Louisiana State Medical Society in its issue of August 1, gave the following information on efforts to aid in the rehabilitation of the facilities of the three physicians who aided so materially in caring for victims of the hurricane.

"Members who have not already made contributions to the Cameron Parish Medical Rehabilitation Fund are urged to send checks at once. The fund was established by the Louisiana State Medical Society to provide financial assistance to three young physicians who lost their homes and offices while rendering emergency medical care to the citizens of Cameron Parish during hurricane Audrey. It is hoped that the fund will speed reconstruction of the offices of Dr. C. W. Clarke of Cameron, and Drs. S. E. Carter and G. W. Dix of Creole and thereby restore normal medical service to people of the storm-ravaged area. The fund was established as a tribute to all physicians of the area who performed in the best traditions of the profession during and after the hurricane.

Send your checks to Cameron Parish Medical Rehabilitation Fund, c/o Louisiana State Medical Society, Room 105, 1430 Tulane Avenue, New Orleans 12, La.

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Revised and added sections of the mental health code as enacted by the 70th General Assembly

Section 4-2. Upon admission of such a person to the hospital, the Superintendent thereof shall inform the patient, and his relatives, parents, guardian, or attorney, if any such persons accompany the patient to the hospital, in simple non-technical language, that the patient has the right to leave the hospital 30 days after giving the Superintendent thereof notice in writing of his desire to leave, and the Superintendent of the hospital shall release such patient within 30 days after receipt of such notice, unless the patient shall within such 30 days, in writing, withdraw his notice; provided however that if a petition is filed for court commitment of such patient within 30 days after the receipt by the Superintendent of a notice of the patient's desire to leave, such patient may be detained by the Superintendent not longer than 5 days beyond such 30 day period pending a final order of the court in the court commitment proceedings; provided, further, that should the said proceedings be continued at the request of the patient then such patient may be detained while such proceedings are continued; provided, further, that a patient admitted to a hospital on a voluntary application for a third voluntary admission or for a fourth voluntary admission may not give such notice until he has been in the hospital for 90 days, and a patient admitted to a hospital on a voluntary application for a fifth voluntary admission or for any other additional voluntary admission thereafter may not give such notice until he has been in the hospital for six months. (As amended by Act approved July 8, 1957).

Section 6-7. If the Superintendent shall find any patient admitted on an emergency petition to be without mental illness, or not in need of mental treatment, or if for any other reason such patient is found by the Superintendent to be not a fit subject for care, treatment and detention in a hospital for the mentally ill, or if such patient shall recover from his mental illness, or be improved to such an extent that he is not in need of further mental treatment, the Su-

perintendent shall discharge such patient. (As added by Act approved July 8, 1957).

Section 7-11. When the Superintendent of any State hospital to which a mentally ill or mentally deficient person, or person in need of mental treatment has been admitted upon commitment to the Department, shall in writing notify the Court entering the original order committing such person to the Department that such person has been conditionally discharged from such hospital, or has been granted an absolute discharge as improved or unimproved, such person may, at any time after his discharge, file a petition in the Court under the provisions of Sections 7-1, 7-2 or 7-3 of this Act, as the case may be. Provided, however, that the notice shall be accepted in lieu of the physician's certificate required by said sections.

In no case shall an absolute discharge as improved or unimproved be construed as a conditional discharge, but a person receiving an absolute discharge as improved or unimproved shall be finally and completely released from the person, hospital, or Department to whom or to which such person has been committed. (As amended by Act approved July 8, 1957).

Section 7-12. If any patient conditionally discharged or boarded out be not returned to the hospital from which such patient was so conditionally discharged or boarded out within one year after the expiration of the period for which such patient was so conditionally discharged or boarded out, then such patient shall be considered to be absolutely discharged, and the Superintendent of the hospital from which such patient was conditionally discharged or boarded out shall so notify the Court having original jurisdiction of such patient and the Court upon receipt of such notice shall enter an order discharging such person; provided, that if the Superintendent or Department desires a continuation of the conditional discharge or boarding out of any mentally ill or mentally deficient person, or person in need of mental treatment, notification of such intent within such year after the period for which such person was conditionally discharged or boarded out, shall be sent to the Court having original jurisdiction of such person; provided, further, that it shall not be necessary for such continuation that such person return to the hospital from which he was so conditionally discharged or boarded out. (As amended by Act approved July 8, 1957).

Section 9-20. The rate at which the sums for the care treatment, detention and training of patients in the State hospitals shall be calculated by the Department is the average per capita cost of the care, treatment, detention and training of all such patients, such cost to be computed by the Department on the general average per capita cost of operation of all State hospitals for the mentally ill and the mentally deficient for the fiscal year immediately preceding the period of State care for which the rate is being calculated; provided that the Department may, in its discretion, set the rate at a lesser amount than such average per capita cost. Less amounts may be accepted by the Department when conditions warrant such action or when offered by persons not liable under this Act. Three-fourths of the amounts so received shall be deposited with the State Treasurer and placed in the Mental Health Fund. The balance, not exceeding the sum of one million dollars per fiscal year, shall be retained by the State Treasurer, ex-officio, as trustee, in a Psychiatric Training and Research Fund outside the State Treasury and shall be expended for training of psychiatric personnel and for research in mental illness or mental deficiency by the Psychiatric Training and Research Authority. If, at any time, the Psychiatric Training and Research Fund unallocated for pending research shall exceed the sum of two million dollars, such excess of said fund shall be restored to the Mental Health Fund. When the amount retained by the Department in any one fiscal year in the Psychiatric Training and Research Fund shall equal one million dollars, all amounts collected thereafter for the remainder of that fiscal year shall be deposited with the State Treasurer and paid into the Mental Health Fund.

The Auditor of Public Accounts shall audit or cause to be audited all amounts collected by the Department and all expenditures from the Psychiatric Training and Research Fund. Disbursements from such fund shall be made as nearly as possible in the manner prescribed in Section 9 of "An Act in relation to State finance", approved June 10, 1919, as amended. (As amended by Act approved July 8, 1957).

Section 9-26. It shall be the duty of the At-

torney General to defend all actions and proceedings against the Director, any state mental health executive, any state hospital superintendent or any assistant state hospital superintendent, arising out of their official duties in connection with the apprehension, transportation, examination, treatment, detention, or discharge of any individual under the provisions of this Act, in any of the courts of this State or the United States. (As added by Act approved July 8, 1957).

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New A.M.A. exhibits

Three new exhibits were previewed at the A.M.A.'s 1957 Public Relations Institute held in Chicago August 28-29. These are available for bookings by state and county medical societies.

(1) "Digestion"—shows the organs involved in digestion, the passage of food through the body, the mechanics of swallowing, the action of the stomach and intestines, and the body's absorption of food.

(2) "Alcoholism is Your Business"—(for professional audiences) gives the viewer an opportunity to eavesdrop on a conversation between a distraught spouse and the family physician over the treatment of alcoholism.

(3) "Organs of the Human Body"—three dimensional models of the torso show location of various organs in the body and their functions.

Societies desiring additional information on these interesting exhibits should write to the A. M.A. Bureau Exhibits.

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Non-group membership in Blue Cross — Blue Shield

It was recently announced by the Medical Director of Blue Cross-Blue Shield, that in answer to thousands of folks who cannot join the plans through a group. . . Blue Cross and Blue Shield will hold a non-group enrollment for individuals and their families in the near future.

Anyone interested in enrolling under the proposed new plan, may receive inquiry slips and complete information about the coming campaign by addressing Blue Cross—Blue Shield, 425 North Michigan Avenue, Chicago 11, Ill.

Physicians desiring a supply of these slips to place on their waiting room table, or to send out with statements, may receive the desired number by addressing the Plans at the above address.

Many people unable to get this fine insurance through lack of a group will be pleased to receive this information and it is hoped that physicians in Illinois will give this information to their patients.

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California, Hawaiian holiday

Members of the Illinois State Medical Society who will attend the annual meeting of the American Medical Association in San Francisco next June, will be assured superior railroad accommodations.

The California Zephyr, with its Vista Domes and ultramodern appointments, has been selected by the Council as its official train. In turn, the Burlington Railroad has given assurance that desirable space, which is usually taken up months ahead, will be set aside for physicians from Illinois.

The railroad also is planning to provide a post-A. M. A. meeting tour of the Hawaiian Islands. Going will be by air from San Francisco and the return trip by the palatial S. S. Lurline.

Details of both trips will be given in later issues.

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CORRESPONDENCE

North Shore Hospital lecture series

The eighth annual series of the North Shore Hospital lectures begins Wednesday October 2 and continues on the first Wednesday of each month through June 1958. Lectures begin at 8:00 p.m. The address is 225 Sheridan Road, Winnetka. Samuel Liebman M.D., has announced that each speaker will answer questions from the floor.

Oct. 2, 1957. **The Psychology of Pregnancy and Parent-Child Relations During Infancy. Therese Benedek, M.D.,** Staff Member, Institute for Psychoanalysis, Chicago.

Nov. 6, 1957. **Management of Eating, Sleep, and Rhythmic Habits. Julius B. Richmond, M.D.,** Professor and Chairman, Department of Pediatrics, State University of New York, College of Medicine, Syracuse, New York.

Dec. 4, 1957. **Management of Learning Difficulties and Speech Disturbances. Margaret Hall Powers, Ph.D.,** Director, Bureau of Physically Handicapped Children and Division of Speech Correction, Board of Education, Chicago; Past President, American Speech and Hearing Association and Division of School Psychologists, American Psychological Association.

Jan. 8, 1958 (2nd Wed.). **Management of Problems of Social Adjustment and the Misbehaving Child. Harry M. Segenreich, M.D.,** Clinical Assistant Professor of Psychiatry, University of Illinois College of Medicine; Faculty of Child Care Program and Clinical Associate, Institute for Psychoanalysis.

Feb. 5, 1958. **Management of Puberty and the Sexual Drives in Adolescence. Adelaide McF. Johnson, M.D.,** Associate Professor of Psychiatry, University of Minnesota, Rochester, Minnesota.

Mar. 5, 1958. **Management of Social Adjustment and Behavior Problems in Adolescence. Joseph B. Cramer, M.D.,** Associate Professor and Director of Child Psychiatry, Albert Einstein College of Medicine; Director of Child Psychiatry, Bronx Municipal Hospital Center.

Apr. 2, 1958. **Management of the Delinquent. Joseph J. Michaels, M.D.,** Training Analyst, Boston Psychoanalytic Society and Institute, Inc.; Visiting Psychiatrist, Beth Israel Hospital, Boston; Instructor in Psychiatry, Harvard Medical School.

May 7, 1958. **Management of the Neuroses of Adolescence. Eugene I. Falstein, M.D.,** Clinical Professor of Psychiatry, Chicago Medical School; Attending Psychiatrist, Michael Reese Hospital; Chief of Child and Adolescent Care, Institute for Psychosomatic and Psychiatric Research and Training, Michael Reese Hospital Medical Center.

June 4, 1958. **Management of the Emotional Problems of the Physically Handicapped Child. William Cooper, M.D.,** Associate Attending Orthopedic Surgeon, New York Hospital; Assistant Professor Clinical Surgery, Cornell University Medical School.

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Clinics for crippled children listed for October

Twenty two clinics for Illinois' physically handicapped children have been scheduled for October by the University of Illinois, Division of Services for Crippled Children. The division will count 16 general clinics providing diagnostic orthopedic, pediatric, speech, and hearing examination along with medical, social, and nursing services. There will be three special clinics for children with cardiac conditions, two for

children with rheumatic fever two for cerebral palsied children.

Clinics are held by the division in co-operation with local medical and health organizations, both public and private. Clinicians are selected among private physicians who are certified Board members. Any private physician may refer to or bring to a convenient clinic any child or children for whom he may want examination or consultative services.

The October clinics are:

October 2—Alton (Rheumatic Fever), Memorial Hospital
October 2—Hinsdale, Hinsdale Sanitarium
October 8—East St. Louis, Christian Welfare Hospital
October 8—Peoria, Children's Hospital (St. Francis)
October 10—Cairo, Public Health Building
October 10—Springfield, St. John's Hospital
October 11—Chicago Heights (Cardiac), St. James Hospital
October 15—Danville, Lake View Hospital
October 15—Quincy, Blessing Hospital
October 16—Chicago Heights (General) St. James Hospital
October 16—Elmhurst (Cardiac), Memorial Hospital of DuPage Co.
October 17—Flora, Clay County Hospital
October 17—Rockford, Rockford Memorial Hospital
October 18—Evanston, St. Francis Hospital
October 22—Belleville, St. Elizabeth's Hospital
October 22—Peoria, Children's Hospital (St. Francis)
October 23—Elgin, Sherman Hospital
October 23—Springfield (Cerebral Palsy), Memorial Hospital
October 24—Bloomington a.m. (General), p.m. (Cerebral Palsy), St. Joseph's Hospital
October 24—Mt. Vernon, Masonic Temple
October 25—Chicago Heights (Cardiac), St. James Hospital
October 29—Effingham (Rheumatic Fever), St. Anthony Hospital

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Emergency hospital displayed

A mobile emergency hospital caravan, sponsored by the Illinois Department of Public Welfare in co-operation with the Illinois Civil Defense Agency, the first of its kind in the United States, had its premier showing at the Illinois State Fair, Springfield, August 9-18. It also was shown at the DuQuoin State Fair, August 25 to September 2.

Representatives of the Illinois State Medical Society and the Chicago Medical Society were present at the introduction of the caravan. Dr. Otto L. Bettag, director of the welfare department, said the hospital will be available for such

Illinois has first mobile emergency hospital in the United States.

disaster as epidemics, floods, tornadoes, and fires.

The caravan contains a representative portion of equipment and facilities for a 200-bed Civil Defense emergency hospital. The FCDA has allocated 132 units to Illinois. These are to be stored at various locations. A unit is to be used for training purposes at meetings of local CD groups, medical and nursing societies.

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Postgraduate courses on diseases of the chest

We wish to announce that the Council on Postgraduate Medical Education of the American College of Chest Physicians will present the following Postgraduate Courses on Diseases of the Chest this fall: 12th Annual Postgraduate Course, Hotel Knickerbocker, Chicago, Illinois, October 21-25; 10th Annual Postgraduate Course, Park-Sheraton Hotel, New York City, November 11-15; 3rd Annual Postgraduate Course, Ambassador Hotel, Los Angeles, California, December 9-13.

Tuition for each course is $75. Recent advances in the diagnosis and treatment of chest diseases—medical and surgical—will be presented.

Further information may be obtained by writing to the Executive Director, American College of Chest Physicians, 112 East Chestnut Street, Chicago 11, Illinois.

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The Academy of Psychosomatic Medicine

The program of the fourth annual meeting of The Academy of Psychosomatic Medicine to be held October 17-19, 1957, at the Morrison Hotel in Chicago will be devoted to "Psychosomatic Aspects of Obstetrics, Gynecology, Endocrinology and Diseases of Metabolism." The meeting will be open to all scientific disciplines, as well as psychologists, social workers and nurses. Information may be obtained from Dr. Ethan Allan Brown, President, 75 Bay State Road, Boston 15, Massachusetts.

This is the first meeting ever held in this country where every one of these specialties will be presented by a multi-disciplinary approach. The panels and symposiums will include obstetricians, gynecologists, endocrinologists, periodontists, psychiatrists, psychologists, anesthesiologists and other specialists in various fields of medicine. There will also be 24 round tables covering all aspects of the above specialties.

The purpose of the Academy is to teach psychosomatic medicine in a manner assimilable to the general practitioner and non-psychiatrically oriented physician.

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"Study abroad" tour theme

"Study Abroad" will be the theme of the third world tour, postgraduate clinical course, sponsored by the International College of Surgeons.

The professional trip will leave San Francisco October 20, and will circle the globe in 48 days. The return to New York will be December 7, with optional return routings to permit stopovers in many European cities. Luxury air lines will be used, and families and friends will be accommodated. Clinical demonstrations will be provided in Hong Kong, the Philippines, Thailand, India, Turkey and Greece.

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School health conference

The sixth National Conference on Physicians and Schools, sponsored by the AMA's Bureau of Health Education, will be held at the Moraine-on-the-Lake Hotel, Highland Park, Ill., October 30 to November 2.

The theme, "A Decade of Progress in Fitness," will emphasize a continuing interest in the health of children and youth. More than 60 nationally recognized consultants and research persons will lead discussion groups.

Topics to be considered will include: the physician's role in youth fitness; mental and emotional aspects of fitness; medical guidance in girls' recreation programs; special health problems in athletics; home and family relations and food factors in fitness.

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Canada's new health service

After 30 years' consideration, Canada has taken the first step toward a national health service with a hospital care insurance plan that is to come into action early in 1959. Six out of 10 provinces, containing more than half the country's population, have signed agreements with the Dominion government to set up hospital insurance systems to be financed jointly by the Dominion and provincial governments. With six provinces participating, the cost to the Dominion will be $100 million a year, a sum expected to be doubled when all 10 provinces join in. The proposed plan includes standard ward care in general hospitals, with some diagnostic service and treatment, and care for the chronically ill. Benefits will be unlimited and cover universal but treatments in tuberculosis sanatoria and mental hospitals will be excluded. At present, 9 million people — about two-thirds of the population — have some form of prepaid hospital insurance from a wide variety of sources. Two provinces have a universal compulsory insurance system financed by premiums and sales taxes while two others have voluntary plans for certain areas. Five plans for prepaid care, sponsored by hospital associations, give service benefits to participants, and many commercial insurance companies also are in the field, offering set cash indemnities against sickness and accidents. But the nongovernmental agencies provide only limited benefits and since their cover is directed mainly toward groups of employees, the rural population and the self-employed can gain protection only through the high premiums set for individuals. Cover for medical and surgical care is even more diversified than for hospital care and much less adequate. Some provinces provide for the treatment of specific diseases such as tuberculosis, cancer, poliomyelitis, venereal disease, and mental illness — free or on a means test — and some provide free medical care for pensioners and people receiving public assistance. On the prairies and in the maritimes, a number of municipalities have salaried community doctors and a few industries have company doctors. Commercial companies also insure against medical costs. A million and a half people are enrolled in eight plans for prepaid medical care sponsored by doctors' associations as an alternative to state medicine. These latter plans are the most popular and give the most comprehensive benefits. But, like the plans operated by hospital associations, their cover is confined so far to groups of employees. Since hospital expenses usually are the heaviest part of medical costs to the patient, the new hospital-care insurance plan meets the strong demand for some provision against the risks of illness — and meets it in a politically safe area. The Dominion government has firmly stated that it will not control or interfere with the hospitals. Doctors, though opposed to any state plan for complete medical care, have generally approved prepaid hospital care where it has been tried. The introduction of a comprehensive medical service is not of course prevented by resistance only from professional bodies. Under Canada's federal constitution, matters of health and welfare are a provincial responsibility; and even with the Dominion government footing half the bill, the poorer provinces could not assume the tax burden of a complete health service. *Editorial. Developments in Canada. Lancet, May* 11, 1957.

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Kid gloves for executives

The wise organization, Medvei says, will insist on its executives having enough leisure, holidays, secretarial help, and comfort in travel and at work. (A New York textile firm has lately announced that its senior executives are to be given a week's holiday every seven weeks.) Thus hours and methods of work should be adapted to the individual; one man will do as much in an hour (and be as exhausted at the end of it) as another in four hours; one works best at night, another in the morning. Some firms have a scheme for regular medical examinations, even including X-ray and laboratory tests. But Medvei points to the danger of such overhauls; on the one hand they make for a false sense of security, and on the other they make people conscious of their health and worried about it. Morever, an examination is not much use unless the physician is acquainted with the subject's background and the stresses he meets. *The Health of Executives. Lancet, May* 11, 1957.

THE P. R. PAGE

Edward A. Uzemack, Director of Public Relations

"Anything a man thinks on, or thinks about, is an idea." — John Locke

The communication of ideas to individuals and special groups of individuals is the principal objective of public relations. It is an activity which is sometimes referred to as the "engineering of consent."

Far too many people still regard public relations men solely as agents for the procuring of newspaper publicity, radio and television interviews. They measure a PR man's worth by type inches, bulk and weight of scrapbooks, and the number of radio and TV appointments, regardless of class of audience or air time.

What these persons fail to understand is that the gaining of attention is but one phase of public relations activity.

In addition to commanding attention by informing others of what you are doing, you may have need to convince them that their attitude toward you or your profession should be modified. Finally, your job is to integrate your attitudes and actions with those of the people with whom you deal.

We live in a competitive society of many interests. The interrelationships between the professions, business and industry, races and religions are among the many which seek a harmonious level.

It is wrong to assume that the mere mouthing of a policy of goodness is going to bring about a better understanding between you and your various publics,—i. e., patients, other physicians, legislators, and labor officials.

The policy of doing good must be established first and fulfilled. It is only then that public appreciation and understanding should be sought. Any other course of action soon becomes transparent.

It is the job of a public relations director to help define social objectives, learn where maladjustments exist, and offer advice on how policies and actions can best be spelled out for the public. He is most effective when he is included in the policy-making core of an organization, and his line of authority is clear and direct.

Quote unquote —

In his best-selling book, "The Organization Man," William H. Whyte Jr. makes the following observations on planning by committee:

"In a committee which must 'produce' something, the members must feel a strong impulse toward consensus. But if that something is to be a map of the unknown country, there can hardly be consensus on anything except the most obvious. Something really bold and imaginative is by its nature divisive, and the bigger the committee, the more people are likely to be offended.

"At this vital moment, the moral responsibility one feels to his colleagues becomes a

downright hindrance. A committee member might be inclined to support an idea, but he is also not inclined to put up the fight for it that will be needed. He is constrained by good will. He feels an obligation to his fellow committeemen, who are, after all, only trying to do a good job, like himself.

"So he compromises, not from mere timidity but from a real desire to show respect for the opinion of others. Even if he has trouble mustering up the respect in some cases, his good will may make him feign it. He has immediate social as well as professional considerations to think of, and throughout any meeting there runs a tacit dialogue that often has very little to do with the ideas being discussed.

"Who won the last argument? Is this wrangling going to shove us into a night meeting? We voted down Professor So-and-So the last two times; aren't we being a little hard on him?

"When the minutes get written up, this groping for consensus is left out, but the thin, gray residue is not."

Medical assistants

Medical assistants play an important role in our professional public relations. The manner in which they handle patients has a lot to do with forming the opinion of the public regarding medical care. In order to bring about a better understanding of the problems, the AMA has prepared and is distributing a packet of informative material for medical assistants. This may be obtained by writing to AMA headquarters, 535 North Dearborn Street, Chicago 10.

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Streptomycin and deafness

Most clinicians probably have heard of occasional patients who have suffered eighth nerve damage from only a short course of streptomycin, the dose not being excessive, and have been content to assume either an idiosyncrasy or an unrecognized impairment of renal function. That this is not a very rare occurrence and indeed, apparently is becoming more common is evident from the findings of Mr. T. Cawthorne and Mr. D. Ranger, at the National Hospital for Nervous Diseases. In the past six successive years, they have seen 22 patients who have suffered eighth nerve damage, affecting vestibular function in 21 and hearing in three, from total doses of streptomycin not exceeding 20 g. The total dose was 10 g. or less in 12 patients and in only seven was a daily dose of 1 g. exceeded. With one exception — a man of 25 with gross renal damage — they were middle-aged or elderly patients. This confirms the greater susceptibility of older persons but the paper also makes it clear that re-education to compensate for loss of vestibular function becomes increasingly difficult with age, a point being reached at which the permanent disability is very great. *Editorial. Toxicity of Streptomycin. Brit. M.J. June 22, 1957.*

AT THE EDITOR'S DESK

Squibb issued an unusual press release on their experimental cancer steroid, Broxoron. "Patients who have received treatment with this drug have talked about it, and exaggerated rumors have reached the press. For example, one excited lady has insisted that the editors of a leading weekly national magazine tell the world immediately about this new 'miracle cure for cancer.' Representatives of the press are now demanding an explanation."

In the circumstances, Squibb decided to abandon silence and present the facts to the press. The release says: "A new steroid named Broxoron (a halogenated progesterone derivative) has been tested on a limited number of patients with premenopausal metastatic cancer of the breast. Results, although not definitive, are adequate to warrant continuing control study. Obviously, a great deal of laboratory and clinical work remains to be done before conclusions can be drawn as to its carcinolytic value."

The Connaught Medical Research Laboratories, Toronto, has been working for two years on a quadruple vaccine against diphtheria, tetanus, whooping cough, and polio. They report considerable progress.

Upjohn reports that its new lotion (Neo-Cortef), containing neomycin and hydrocortisone, produced excellent to good results in 95 per cent of a group of 116 acne patients. There were no untoward effects after two to 24 months of use.

McNeil's new agent for the prophylactic management of angina pectoris is Pentrasine, a combination of pentaerythritol tetranitrate, butisol sodium, and reserpine.

Rep. Eugene J. Keogh (D., N.Y.) needs more support for his fight to get legislature favoring his voluntary pension plan for self-employed persons. The Treasury Department obviously is against it. It is difficult to understand the apathy on the part of physicians, who stand to benefit so much from a bill of this nature.

Hereafter, many women will be forced to tell their age on reaching their 62 birthday. Under the 1956 Amendments to the Social Security Act, women are able to obtain payments three years earlier than under the old law.

There is no end to the way the tax dollar is being used. More than 100,000 disabled workers have been notified that they have qualified for social security disability insurance benefits and will receive their first checks during August. To qualify for disability insurance benefits, a

person must be between 50 and 65 years of age and have a long lasting disability that prevents engaging in substantial activity.

From Europe, comes news of a new treatment of azoospermia with Tegotina, Activion (vitamin T complex). The sperm count increased in 12 of 14 patients and in three couples, pregnancy ensued after eight to nine years of sterility. What is vitamin T complex? Your editors are puzzled, too. It is reported to be an essential trace element for "soldier" termites and ants. It's possible this newcomer will be a competitor of the royal jelly of the queen bee.

W. H. Perloff, et al. reported that small doses of prednisone led to improvement of idiopathic hirsuitism.

The Travenol Artificial Kidney is now available to properly qualified clinicians at less than $1,200. These units are used in the treatment of acute renal insufficiency, transfusion reactions, postsurgical anuria, dialyzable poisons, chronic uremia, and malignant hypertension.

Preludin is the latest appetite suppressant. It is available only on prescription and the manufacturers claim it "works on the appetite center of the brain." They say their product "seems to make it easier to satisfy the appetite earlier in the meal without jitters or diet fatigue." This is a big order, if true.

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Bahamas medical conference

The fourth Bahamas Medical Conference, a post AMA. Clinical Meeting event, will be held at the Fort Montague Beach Hotel, Nassau, December 1-15.

More than 25 physicians will take part in the scientific presentations. Among those who will present papers are Dr. Edward E. Avery, thoracic surgeon, and Dr. Paul R. Rosenbluth, neurosurgeon, both of Chicago.

Special rates will be provided by the hotel. Dr. B. L. Frank, 1290 Pine Avenue West, Montreal, Que., is the organizing physician.

Steroids for orchitis

Four cases are presented of mumps orchitis treated by steroid therapy (Cortico-Depot, Nyco 100 I.U.). A rapid remission was noted in all cases, with a dramatic reduction in the local inflammation as well as generalized systemic effects. It is suggested that all cases of mumps orchitis be treated promptly with steroids, except in the presence of the usual unrelated contraindications to this form of therapy. *George W. Zeluff, M.D. and T. J. Fatherree, M.D. Steroid Therapy in Mumps Orchitis. Ann. Ind. Med. May* 1957.

NEWS of the STATE

ADAMS

Personal.—Dr. and Mrs. William Giles, Griggsville, have moved to Galesburg where Dr. Giles will be associated with Dr. Bernard W. Coan.

New Health Officer.—Dr. E. L. Sederlin, Helena, Montana, has been appointed director of the Adams County Department of Health, succeeding Dr. H. O. Collins who resigned in November, 1956, following twenty-five years of service.

Dr. Sederlin has had many years of experience in public health work. He served as director of the DuPage County Health Department for more than seven years before going to Montana as director of local health services for the Montana State Board of Health. His experience also includes four years as a health officer in the state of North Dakota, and four years in the state of Maryland.

For eighteen years, Dr. Sederlin engaged in the private practice of medicine, nine years in Cleveland, Ohio, and nine years in Laramie, Wyoming.

COLES

Community Hospital Dedicated.—On August 11 an open house featured the dedication ceremonies of the new fifty-two bed Charleston Community Memorial Hospital. Cecil H. Swedell is president of the board of directors of the hospital.

COOK

Physicians Elevated to Full Professorship.—Dr. Robert W. Wissler has been promoted to professor of pathology in the Division of Biological Sciences at the University of Chicago, and Dr. Albert Dorfman professor of pediatrics. Dr. Lowell T. Coggeshall, dean of the division, announced the appointments.

Dr. Calloway Organizes Medical Associates of Chicago.—The first established group of practice started by Negroes in Chicago with complete diagnostic facilities is now located in the Lake Meadows development. The group was organized by Dr. Nathaniel O. Calloway, a member of the staff at the University of Illinois College of Medicine, and consists of fourteen physicians and three dentists. The entire staff, including technicians, nurses and office personnel, numbers about forty persons. The new offices house a pharmacy, medical diagnostic and dental laboratories.

Personal.—Dr. Robert C. Stepto was recently elected president of the Cook County Physicians Association. He is chief of cytological research at Stritch School of Medicine of Loyola University where he is also an assistant professor of obstetrics and gynecology.—Dr. Herman N. Bundesen, health commissioner of Chicago, recently observed his seventy-fifth birthday.—Dr. Leon Unger has

returned to Chicago after giving eight presentations on bronchial asthma, migraine, and histaminic cephalgia. He spoke before the Medical Association and the Veterans Hospital in Puerto Rico; Bahama Medical Conference, Nassau; University of Miami School of Medicine; a joint meeting of the Florida Pediatric and Allergy Societies, Hollyood, Florida; and the Southwest Allergy Forum in Fort Worth, Texas.

Hospital News.—Ground breaking ceremonies were held recently for the construction of a three million dollar addition to Illinois Masonic hospital. The work, which will be completed by September, 1958, will increase the hospital's bed capacity from 400 to 600. Included will be an air conditioned eight story building with two basements, adjoining the present hospital in Nelson Street. This will provide for additions of several new departments and expansion of existing departments. Adjoining the hospital in Wellington Avenue will be a one story building with foundations designed to support seven stories eventually, newspapers reported.—The J. Emil Anderson diagnostic clinic, a million dollar addition to Swedish Covenant hospital, was dedicated with appropriate ceremonies July 14. The ceremonies also marked the fifty-first anniversary program of the Covenant Old Peoples home, located on the hospital grounds.

The Capps Prize.—The Institute of Medicine of Chicago is offering the annual Joseph A Capps Prize of $300 for the most meritorious investigation in medicine or in the specialties of medicine. The investigation may be also in the fundamental sciences, provided the work has definite bearing on some medical program. Competition for 1957 is open to graduates of Chicago medical schools who completed their internship or one year of laboratory work within a period of five years prior to January 1, 1957, excluding their terms of service in the Armed Forces. Manuscripts must be submitted to the Secretary of the Institute of Medicine of Chicago, 86 East Randolph Street, Chicago 1, not later than December 31, 1957. The manuscript of the prize paper, as submitted, is to become the property of the Institute of Medicine of Chicago. The prize winner may be invited by the Board of Governors of the Institute to present his paper at a meeting of the Institute. If no paper submitted is deemed worthy of the prize, the award may be withheld at the discretion of the Board of Governors. The prize was founded by Dr. and Mrs. Edwin R. Le Count.

The Holmes Memorial Lecture.—Dr. Irving H. Leopold, professor and chairman of the department of ophthalmology, Graduate School of Medicine, University of Pennsylvania, Philadelphia, recently delivered the third Edward Lorenzo Holmes Memorial Lecture of the Institute of Medicine of Chicago. His subject was "Therapy of Vascular Diseases of the Fundus". The presentation marked Dr. Leopold's selection of the Edward Lorenzo Holmes Citation and Award in recognition of his many contributions in the field of ophthalmology through research and through the training of ophthalmologists for careers in university teaching and research.

Specialty Society Elections.—Dr. Julius Bolgla was recently chosen president of the Chicago Society of Anesthesiology. Other officers are Drs. Bernard K. Galston, vice-president, and E. Trier Morch, secretary-treasurer.—At the June 24 meeting of the German Medical Society of Chicago, the following officers were elected: Ferdinand Seidler, president; Joseph R. Mueller, vice-president; Eugene F. Lutterbeck, secretary, and Edward V. Stalzer, treasurer. Named to the board of directors were Drs. Hans Deutsch, Joseph Gardy, Paul H. Holinger, Fidelius Knoepfler and Lydia Walkowiak.

Dr. Barth Named Professor—Dr. Jenkinson Retires.—Dr. Earl E. Barth, professor of radiology in the Northwestern University Medical School, has been named chairman of the department of radiology. The appointment is effective Sept. 1. He succeeds Dr. Edward L. Jenkinson, who is retiring as chairman of the department.

Dr. Barth, a graduate of Northwestern medical school, joined the faculty in 1931 as a fellow in radiology. In 1953 he was named

a full professor. He is also chief consultant in radiology at the Veterans Administration Research Hospital.

He is a past president of the Chicago Roentgen society and a past chairman of the executive council of the American Roentgen Ray Society. He also has served as treasurer and vice president of the American College of Radiology, and now is chairman of the Board of Chancellors of the College. He is a member of the Radiological Society of North America and a fellow of the Inter-American College of Radiology.

Dr. Jenkinson joined the medical school faculty in 1919 as an instructor in radiology. He has been professor and chairman of the department of radiology at Northwestern medical school since 1947.

During his years at Northwestern University he has become well known for his work on the x-ray diagnosis of gastrointestinal diseases. In 1954 he was chosen to deliver the annual Caldwell Lecture to the American Roentgen Ray Society, one of the greatest honors in the field of radiology.

Physicians Honored.—Dr. Charles B. Huggins, professor of urology and director of the Ben May laboratory for cancer research, University of Chicago, was recently presented with an honorary degree of doctor of science by Torino (Italy) university and elected honorary president of the Italian Urological Association, both in recognition of his contributions to research in the control of cancer by hormones.—At the annual meeting of the American College of Chest Physicians in New York recently, the following physicians from Chicago received their certificates of Fellowship in the College: Maurice Berger, Donald Cassels, Joseph R. Christian, Robert F. Dillon, Egbert H. Fell, Bessie L. Lendrum, Frederick M. Lindauer and Robert A. Miller. Otto L. Bettag was re-elected to the board of regents of the College.—Dr. Lowell T. Coggeshall, dean of the Division of Biological Sciences, University of Chicago, has been elected to the board of directors of the John Crerar Library.

The Hedblom Lecture.—Dr. Thomas G. Baffes, a member of the staff of Children's Memorial Hospital, recently delivered the Hedblom lecture at the University of Illinois College of Medicine. His subject was "A Surgical Correction for the Juxtaposition of the Great Vessels." The lectureship is sponsored by the Iota Chapter of Phi Beta Pi Fraternity in honor of the late Dr. Carl Hedblom, who, until his death, was professor of surgery and head of the department.

JEFFERSON

Tuberculosis Addition Dedicated.—Dedicatory ceremonies, August 18, marked the opening of a new addition to the Mount Vernon State Tuberculosis Sanitarium. Gov. William G. Stratton gave the principal address. Included among the speakers were Dr. Roland R. Cross, Springfield, Director of the Illinois State Department of Public Health. The sanitarium was established in 1951 with a bed capacity of 100.

GENERAL

Poison Control Centers.—Poison control centers are now located in Chicago, Springfield, Evanston, Peoria and Berwyn, according to the Illinois Health Messenger. Three additional centers are being planned for the downstate area. Each of the established centers offers facilities for emergency treatment of cases of poisoning. In addition, each center provides a twenty-four hour a day telephone service to answer inquiries from physicians regarding the ingredients of drugs and household supplies and to make recommendations as to the latest treatment methods.

Records of the numbers and types of cases of poisoning are maintained by the centers, which also serve as a focus for epidemiological studies and for research designed to evaluate various methods of prevention and treatment.

Cases of poisoning are reported by the centers to the State Department of Public Health. The centers also cooperate with the state and local health departments, and other official and voluntary agencies, in educational programs designed to prevent accidental poisoning.

To assist parents and others concerned with the prevention of accidental poisoning, the

U.S. Public Health Service has prepared a circular entitled Protect Your Family Against Poisoning. This informational guide gives a series of reminders regarding the handling and storage of drugs, poisons and other household chemicals. Copies of the circular are available to Illinois residents from the State Department of Public Health, State Office Building, Springfield.

Dr. Church Named Deputy Director.—Dr. Ruth E. Church has been appointed Deputy Director in charge of the Division of Hospitals and Chronic Illness of the Illinois State Department of Public Health, effective June 1. She succeeds Dr. G. Howard Gowen who resigned recently to accept a position with the International Cooperation Administration in Santiago, Chile.

Except for two years in the U.S. Army, Dr. Church has been associated with the department since 1945, first as director of the Fulton-McDonough County Defense Zone Health Department and later as health officer for District Health Department No. 3, with headquarters in Savanna. Since 1954 she has served as chief of the department's Bureau of Communicable Disease Control.

Prior to coming to Illinois, Dr. Church served for two years with the Wisconsin State Board of Health and for five years as director of a county health department in Iowa. She is also a graduate nurse and worked for three years with the Visiting Nurse Association in Chicago.

Postgraduate Medical Association.—The forty-second International Medical Assembly of the Postgraduate Medical Association of North America will be held at the Palmer House, Chicago, September 30-October 3, 1957, under the presidency of Dr. J. Mather Pfeiffenberger, Alton, Ill. Among the Chicago physicians on the program are William F. Mengert; Walter G. Maddock, Wayne B. Slaughter, James K. Stack, J. Peerman Nesselrod; Herbert E. Schmitz; Harry F. Dowling; Robert M. Kark; Warren H. Cole; M. David Allweiss, and M. Edward Davis. Included on the board of trustees of the association are Drs. Edwin S. Hamilton, Kankakee, and W. I. Lewis, Herrin.

New Award Announced at Voice Conference.—Dr. K. Faaborg-Andersen, Copenhagen, was recently selected as the first recipient of a new award for outstanding research in the field of laryngology; specifically Dr. Faaborg-Anderson was cited for his electro-myographic studies of internal laryngeal muscles in human beings. Presentation was made by Mr. W.E. Gould, president of the William and Harriet Gould Foundation, which made the award possible, during the International Voice Conference. The meeting dealt with laryngeal research, physiology and therapy in Thorne Hall on the campus of Northwestern University Medical School. It was under the joint chairmanship of Hans Von Leden, M.D., and Paul Moore, Ph.D., with the cooperation of representatives from all universities in the Chicago area. Delegates from twenty-five foreign countries and the United States represented all of the leading laryngeal research centers. The guest of honor, Dr. Eelco Huizinga, professor of otolaryngology, University of Groningen in the Netherlands, addressed the formal closing ceremonies on "The Larynx and Voice—Animals and Man."

DEATHS

Robert F. Lischer, Mascoutah who graduated at Washington University School of Medicine, St. Louis, in 1904, died July 6, aged 83. He was a member of the "Fifty Year Club" of the Illinois State Medical Society.

Samuel Franklin March*, Carrollton, who graduated at the University of Missouri School of Medicine in 1909, died April 28, aged 74, of bronchopneumonia. He had served on the board of health, the board of education and was a member of the staff of the Thomas H. Boyd Memorial Hospital.

Louis E. Schmidt, Wausau, Wisconsin, formerly of Chicago, who graduated at Northwestern University Medical School in 1896, died July 12, aged 88. He was emeritus professor of urology at Northwestern University Medical School.

*Indicates member of the Illinois State Medical Society.

Carl O. Schneider*, Chicago, who graduated at the College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, in 1908, died July 18, aged 78. He limited his practice to opthalmology.

Abraham Morris Siegel, Chicago, who graduated at Northwestern University Medical School in 1913, died February 10, aged 70.

Anton Stockl*, Lansing, who graduated at The General Medical College, Chicago, in 1924, died April 27, aged 62, of acute coronary thrombosis. He was a member of the staff of St. Margaret Hospital, Hammond, and a member of the American Academy of General Practice.

Frederick O. Tonney*, Chicago, who graduated at Illinois Medical College in 1909, died July 11, aged 76. He was director of laboratories and research for the Chicago Health Department from 1909 to 1931, and assistant commissioner in charge of laboratories and research for the Health Department from 1931 to 1938. He served as medical officer for the Federal Trade Commission in Washington in 1939.

William B. Whitaker, Chicago, who graduated at Rush Medical College in 1897, died July 24, aged 82. He was house physician for the New Michigan Hotel for more than 50 years.

Sigmund S. Winton*, Chicago, who graduated at the University of Toronto Faculty of Medicine, Ontario, in 1939, died July 27, aged 45. He was an associate professor of medicine at Northwestern University Medical School and a member of the staffs of Columbus, Weiss and Oak Forest Hospitals.

*Indicates member of the Illinois State Medical Society

Treatment of arthritis of the hip

The treatment of degenerative arthritis of the hip usually can be conservative. Lessening of physical activities, use of a cane, and reduction of excess weight are all important. The various forms of salicylates are the most useful drugs. In acute phases, the intraarticular injection of hydrocortisone may be used. We feel the administration of an abundance of vitamins, particularly vitamins B, C, and E, is useful. Numerous surgical measures are available to lessen pain or deformity but none can be expected to give an entirely satisfactory result. These are major surgical procedures and should be carried out only on carefully selected patients. An arthrodesis of the hip is the one procedure that can be expected to give relief of pain but this is a formidable and difficult procedure to carry out in an elderly person. *J. Albert Key, M.D. and Lee T. Ford, M.D. The Treatment of Degenerative Arthritis of the Hip. Geriatrics. July* 1957.

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Infection in cancerous tissues

According to Lacassagne, infection of a cancerous lesion reduces the chances of cure. For example, infection in cancerous tissues is one of the well established contraindications to radiation therapy. Irradiation sensitivity of cancerous lesions is diminished in the presence of infection, and the surrounding inflamed tissues are increased in radiation sensitivity. Thus the irradiation sensitivity of cancerous and healthy environmental tissue becomes relatively equalized. The effectiveness of radiation treatment obviously is restricted because of this equalization. Necrosis may occur from irradiation in such instances as scirrhous cancer of the breast, sclerosing ulcer, or infiltrating carcinoma of the tongue. This occurs frequently in recurrent cancer after heavy irradiation. *Infections that Complicate Cancer. Cancer Bull. Nov.-Dec.* 1956.

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Retinal detachment

Treatment of retinal detachment requires early bed rest and surgery. Prognostically, Okamura and Schepens state that in cases of a retinal break with a minimum detachment, the probability of cure by operation is as high as 95 per cent. If the detachment is allowed to progress, this figure will drop to 50 or 60 per cent, owing to the formation of fixed folds in the retina plus vitreous retraction. Early cases with minimum detachment are treated chiefly by diathermic surgery. The more advanced cases are now treated by scleral buckling whereby the choroid is folded inward and brought into contact with the detached retina. Schaffer recently has introduced the idea of vitreous implatation whereby the detached retina is pushed back against the choroid and diathermy alone or with scleral buckling also is performed. *William H. Kratka, M.D. Diagnosis and Management of Ocular Problems. Delaware M.J. June* 1957.